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ORIGINAL ARTICLES.

TOILET AND MEDICINAL SOAPS.

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The skin may be briefly described as a dense layer, consisting chiefly of white fibrous tissue, with which are intermingled yellow elastic and unstriped muscular fibres. It is abundantly supplied with blood-vessels, lymphatics and nerves. Its outer surface is thrown up into little elevations, called papillæ, in which are lodged the tactile corpuscles. Sebaceous and sudoriparous glands are embedded in its substance, while its exterior is protected by an epithelial covering divisible into four strata. The epithelial cells constituting the superficial layer are hard and dry, from loss of water and conversion of albumin into keratin. The cuticular appendages, hair and nails, are merely modifications of the epithelium.

The epithelial sheath, known as the cuticle or epidermis, is destitute of blood-vessels or nerves, and nourished solely by imbibition. The cells dry, harden and flatten as they approach the surface, and are continually being shed as they lose their vitality. The hair and nails, as the limit of their growth is reached, require trimming.

The integument as a whole, including the epiderm, protects the soft parts which it covers. The office of the epiderm is to shield the more delicate derm from mechanical and chemical irritants.

The functions of the true skin are varied and important. The sebaceous glands, situated in the substance of the skin, open, as a rule, into the hair follicles, and lubricate the hair-shaft as it is gradually extruded. At the same time a cholesterine fat is formed within the cornified cells of the hair, nails, and most superficial layer of the epidermis. These fats render the skin soft and pliable, protect those portions which are exposed to atmospheric vicissitudes, and preserve the dessicated cells from cracking and exposing the softer cutis vera. They lessen friction and prevent maceration upon prolonged exposure to moisture. Perspiration is an excretory fluid, contains a small proportion of urea, and is of importance as a medium of elimination. A higher function performed by this fluid is the regulation of the temperature of the body. The skin is also a respiratory organ, absorbing oxygen and giving off carbonic acid. The general covering of the body, therefore, affords a certain degree of assistance to the work of the kidneys and lungs.

The dry cells of the epiderm prevent the too rapid evaporation of water from the succulent tissues beneath, a loss which would be incompatible with their vitality. Finally, the elasticity and density of the corium, together with the mode of its attachment to the subcutaneous tissue, guard the deeper structures against the effects of violence.

The Action of Soap.—This brief rehearsal of anatomical and physiological facts prepares us to understand how intimately the health of the cutaneous envelope depends upon that of the general system. If the blood be depraved by the presence of noxious principles, whether generated within the organism or admitted from the external world; if the nutrient fluid has not been properly elaborated, is lacking in red corpuscles and hæmoglobin, the nutrition of the skin must suffer with that of all other tissues. Thus gout, rheumatism, diabetes, cancer, scrofula, tuberculosis, syphilis and fevers, occasion more or less characteristic lesions of the integument. Anæmia, chlorosis, disease of the liver or kidneys, likewise impair the health of the integument. A healthy skin depends primarily upon healthy blood, proper nervous tone, and a healthy condition of capillary blood-vessels. All these conditions are interdependent. On the other hand, to perform its own highly useful functions, the skin itself requires frequent ablution. Exposed as it is to deleterious influences from within and from without, it requires, for its utmost efficiency, scrupulous attention. The rate and uniformity of its capillary circulation is often rudely disturbed by atmospheric influences, organic and inorganic material is constantly being deposited upon its surface, and the accumulation of defilement is a frequent source of disease. An uncleanly skin offers an excellent soil for the growth of various pathogenic microörganisms, whereas a healthy integument is generally able to resist their invasion.

Personal beauty depends to a great degree upon the habits of life. We are not able, it is true, to reconstruct irregular features, but temperance, pure thoughts, and personal cleanliness, produce good blood, a healthy skin, a bright eye, an expression of intellect, animation and refinement, and this combination, to all intents and purposes, constitutes beauty.

A fine complexion is an essential element of comeliness, and complexion, whether blonde or brunette, whether creamy, rosy or olive, is due to activity of the circulation, the state of the blood, the presence of a sufficient but not excessive quantity of oil, the proper performance of the functions of the skin, and scrupulous cleanliness of the epithelial coat. The nutrition of the skin is to be chiefly secured by internal hygiene. The epithelial surface must be cleansed by local measures, by proper attention to the toilet. The mixture of epithelial débris, fatty matter, organic and inorganic deposits from within and without, cannot be effectually removed by the sole and unaided use of water. A substance is needed which is able to dissolve and emulsify the extraneous matter, without inflicting any injury upon the living cells of the integument. Such a substance we have in soap; that is, if properly prepared.

A Good or Pure Soap.—In a strictly chemical sense, soap is a combination of a fatty acid with a basic metallic oxide, but the term is usually restricted to the product resulting from the union of fats and oils with alkaline substances, the latter combinations alone being soluble in water. In the manufacture of soap, the fat is derived from various animal and vegetable sources. Tallow, suet, lard, palm oil, olive oil, cottonseed oil and cocoanut oil are among those most frequently employed, the choice depending to a large extent upon the place of production, in consequence of the comparative supply and price of the different fats. The alkalies—potassium and sodium—are used almost exclusively in the form of caustic lyes. A broad physical difference at once separates soda from potash soaps, the former being of relatively hard, the latter of soft consistency, although the soda soap may be made from a fluid fat, and the potash soap from the solid fatty acids. Soft soap is restricted to the treatment of disease. Hard soap is used for purposes of the toilet, incidentally aiding in the sanitation of the skin, and acting also as a prophylactic against local disease. Many medicinal substances have been incorporated in the soda soaps, with the view of making their solutions useful adjuvants in the treatment of cutaneous maladies. Soda soaps are, therefore, divisible into *toilet* and *medicinal soaps*. I shall first speak of the former class.

The integument will become soiled in the contingencies of daily life, and requires to be cleansed with soap and water. In addition to merely removing dirt, the friction employed in the act of washing stimulates the tone and the circulation of the skin. The action of the soap is promoted by the use of warm and soft water, or water free from insoluble salts of lime. The fluid should not be too hot, nor should the soap be used too frequently, or in too great a quantity. The dirt upon the skin is composed of dead and loosened epithelial scales, mixed with organic and inorganic materials, some of which have been thrown out of the system upon the skin, while others have been deposited upon the skin either from atmospheric contact, or from articles which have been handled. The object of washing is obviously the removal of this deposit without injury to the epithelium. In order to fulfil these indications, soap should be of neutral reaction or nearly so—in other words, should contain very little free alkali. According to chemical calculation, an exact combination of fatty acids with an alkaline base should result in a product of neutral reaction. This result, however, is seldom or never attained in the process of manufacture. The soap boiler roughly tests the reaction by the sense of taste, and it is asserted that the alkalinity of the same style of soap varies in each separate lot made. Be this as it may, an essential requisite of a good toilet soap is that it contains a minimum proportion of free alkali. An undue amount of alkali present will act as a direct chemical irritant, or even cauterant. A smaller proportion exerts an injurious influence by dissolving the fats of the epithelium, leaving the latter dry, harsh and easily disposed to crack. Many soaps, attractive to the sight and smell, are, on account of the alkali which they contain, no more fit to be used upon the skin than is laundry soap, and this statement is especially true of those made by the cold process. If a soap causes smarting as soon as the lather is applied, it should be washed away from the surface by means of a slightly acidulated solution, lemon-juice for example, in order to neutralize the excess of soda. The essential oils used to communicate an agreeable perfume are often irritant in their effect, and the same is to be said of the brilliant colors used to render the preparation sightly and salable. Soap is thus defined by the United States Pharmacopœia: "A white or whitish solid, hard, yet easily cut when fresh, having a slight, peculiar odor, free from rancidity, a disagreeable alkaline taste and an alkaline reaction. It is readily soluble in water and alcohol." This definition applies to the white Castile, made with olive oil, the type of a good soap. The red streaks in the mottled Castile are due to a deposit of an iron soap which, being insoluble, detracts from the efficiency of the product, and is therefore an impurity. Cocoanut oil is the least desirable of fats for soap making. As it requires a larger amount of alkali to saponify, the finished product retains a surplus of lye, besides other irritants, and the oil itself is exceedingly prone to undergo decomposition. The only advantage it possesses is its solubility in salt water, whence its name of "marine soap."

Adulterated or Impure Soap.—For various commercial reasons of economical production, in order to meet competition, etc., various adulterations are frequently added to soap. Most of these seriously diminish its value as an article of the toilet. Resin is one of the commonest impurities, and is used because its acids require less soda in order to saponify. This is contained in the common yellow soap, which is a mixture of a resin soap in the proportion of 10 to 40 per cent. or more with any hard fatty soap. The presence of a large amount of resin is decidedly irritant to delicate skins. Other substances which are often added are pearl-ash, silicate of soda, starch, sugar, and an excess of common salt. These adulterants are either harmful in themselves, or are changed by the soda lye into deleterious substances. Transparent so-called glycerine soaps are frequently completely destitute of glycerine, the transparency being due to the presence of sugar, of which the article may actually contain a larger quantity than of soap. These contaminations are more or less injurious to the integument, especially if it be diseased. Again, cheap soap is often made of imperfectly purified animal fat, which contains bacteria of putrefaction, and probably also pathogenic organisms.

In the preparation of medicinal soaps, a neutral reaction is of especial importance, as in a neutral mass the incorporated drug or drugs remain unchanged for an indefinite period, while in alkaline soaps they soon undergo chemical alteration.

Toilet Soaps.—A number of oleaginous and demulcent, or even slightly stimulant substances, make very acceptable additions to soap intended for toilet use. These, equally distributed throughout the mass, and mingling with the lather, produce a softening or tonic effect upon the skin due to themselves, and distinguished from the detergent action of the soap. A very narrow margin, in fact, separates some of the toilet preparations from those medicated to suit diseased conditions.

Lanolin Soap.—The presence of a certain amount of lanolin softens the integument, and neutralizes an irritant or solvent action due to an uncombined alkali.

Glycerine Soap.—A pure glycerine soap is an excellent preparation, particularly for use in the winter

season, when the hands tend to become chapped. Glycerine soap usually contains equal quantities of pure hard soap and glycerine. An excess of glycerine will dissolve the soap, and the mixture forms but a feeble lather.

Suet may be made use of instead of beef tallow or lard.

Oatmeal Soap.—Oatmeal is an emollient ingredient of certain toilet soaps.

Bran Soap is an emollient application to rough skins.

White Castile Soap, made from olive oil and soda, is one of the best articles for the toilet, being free from adventitious irritants, such as pigments and perfumes. The mottled Castile was formerly preferred, but the insoluble iron in no way adds to its efficiency, nor is it an indication of the absence of impurities.

Marshmallow Soap.—Marshmallow is an agreeable constituent of a toilet soap. The oil of almond, incorporated in a soap, has an excellent softening influence upon the integument.

Pine-needle Extract Soap.—A soap containing pine-needle extract has an admirable tonic effect, and is a useful disinfectant for the hands of physicians and surgeons.

Shaving Soap.—A special application which applies only to men is a soap to facilitate the removal of the beard. An efficient shaving soap should be of the soda type, and semi-solid consistence. A small quantity of mild and agreeable perfume may acceptably be added in the process of manufacture. A soap which forms an abundant and rather thick froth, and permits the painless removal of hairs from the face through the habit, so customary among barbers, of "close shaving," is mentioned here only to be condemned. It destroys a thin layer of the cuticle, lacerates the minute blood-vessels which surround the openings of the hair follicles, and renders the skin irritable, tender and prone to disease.

Unna has devised a soap which he terms superfatted. It is made with beef tallow and a mixture of sodium and potassium in definite proportions. A slight excess—about 4 per cent.—of fat is present. This soap has been principally used as a basis for the incorporation of certain medicaments adapted to treatment of diseases of the skin. In the absence of such additions, however, it constitutes an excellent toilet article, cleansing the skin from dirt, yet leaving the natural unctuousness undisturbed. It is so prepared that the unsaponified fat does not readily become rancid. Super-fatted soap, used with warm water, is said to be admirably suited for use in shaving.

Potassium and Sodium Soaps.—Turning now from its hygienic, prophylactic and cosmetic properties, we find that saponaceous preparations have a decided sphere of usefulness in the treatment of cutaneous disorders. It is self-evident, that when a surface has been cleansed of foreign matter and pathological products, it is placed under the most favorable circumstances for the action of whatsoever topical remedy it is brought into contact with, irrespective of the form in which that remedy may be applied. Cases differ, conditions differ and stages differ, so that powders, lotions, ointments, pastes and soaps have each their peculiar range of utility. But the fact that the very agent which cleanses a certain area is also the vehicle by which a remedy is applied, is a sound argument for the employment of medicinal soaps.

Both the hard and soft variety have been used in dermato-therapy. I shall dwell first upon the latter because it has been most widely used and is more powerful in its effects.

Soft or Potassium Soap.—Soft or potash soap is variously known under the names of sapo mollis, sapo viridis, green, brown or black soap. It contains a certain excess of alkali and may be made from either animal fat or vegetable oil, olive oil being chiefly used in its manufacture. The form in which it is met with is often unsatisfactory, and only the carefully prepared product of the best makers should be selected. Green soap should have the consistency of jelly, should not flow from an upturned vessel, should have a brownish or greenish color, be soft and perfectly homogeneous, have a strong, caustic odor and an acrid, alkaline taste. It should contain no sand and should be soluble in alcohol with little residue. The best quality comes to this country from certain German manufacturers. Green soap softens, macerates or even destroys the epiderm, the effect varying according as it is or is not applied with friction, and according to the time during which it is left upon the surface. It may be used under its own form or in that of an alcoholic solution, two parts of the soap being dissolved in one of alcohol. Solution removes the disagreeable odor and when filtered and scented with the spirit of lavender, it is known as spiritus saponis kalinus, or Hebra's spirit of soap.

In the "soap cure" sapo viridis is allowed to remain for some time in contact with the affected region, or is even applied with friction until blood oozes from the surface. It is used in this manner especially in chronic eczema and psoriasis. When sufficient irritation has been excited some sedative application may be used in its place. In psoriasis, the patient, after having been vigorously rubbed with soft soap, is sometimes kept for three days wrapped in a blanket impregnated with the soap, at the expiration of which time he is allowed to take a bath. In eczema affecting the scrotum, green soap may be applied as a poultice until the epidermis has been destroyed and the surface is covered with a free exudation. Good results are undoubtedly often secured by these methods, but they are are too heroic for general adoption in this country. American skins are too thin to bear with impunity such severe treatment. An excessive irritation is produced and the disease is, not infrequently, aggravated. Moreover, American people will not submit for any considerable period to harsh measures and confinement to a hospital bed on account of a condition which, though a source of annoyance and mortification, will not interfere with a successful prosecution of business.

Employed in moderation, however, soft soap removes scales, crusts and dirt, and is beneficial in the treatment of seborrhœa, ichthyosis, pityriasis, eczema, psoriasis, acne, rosacea, elephantiasis, leucoderma, scrofuloderma, and syphiloderm. Kappesser, Senator and others have made use of it successfully in the treatment of enlarged glands whether due to simple inflammation, syphilis or scrofula. Beetz speaks favorably of its action in many cases of subcutaneous and glandular suppuration. In scrofulous or tuberculous disease of the mesenteric glands, periostitis or caries amendment has followed the practice of the same method.

In carrying out this treatment the best procedure is to first, rub the soap lightly with the ends of the fingers upon a small portion of the diseased patch, gradually covering a larger area until the whole affected surface, if not too large, may be treated at one *séance*. If the area be too extensive, it may be gone over in sections, one portion at a time. If this manner of operating be well borne it may be prosecuted more vigorously, either by assistance of the finger tips, a piece of flannel or a brush. Finally, upon cessation of the manipulations the surface should be washed.

The spirit or tincture of soap, either pure or diluted with three parts of Cologne water, makes an effective liniment in cases of sprains, stiffness and pain of joints, etc. Anodynes, such as aconite, chloroform or laudanum, may be very serviceably combined with it for use in these affections.

The soft soap treatment is effective but must be carefully supervised. It is capable of readily penetrating the tissues and therefore must be sedulously watched if used in acute cases or upon delicate skins.

Soda soap is of comparatively hard consistence and is milder in its action. It can be used in the same class of cases to which potash soap is applicable and we may often, therefore, have our choice between the two forms. As a matter of practice it will often be found of benefit to begin with the hard and subsequently resort to the use of soft soap. Even in the therapeutical employment of soft soap, however, judicious circumspection is demanded.

Medicinal Soft or Potassium Soap.—Either potash or soda soap may be made the vehicle for the application of various medicaments. This places in our hands an easy and convenient method of employing local remedies, a method which, in its preliminary operation upon the cuticle, enhances the effect of the chosen medicament.

Many drugs have been used for the purpose of medicating soft soap. Those which have proved of most service are tar, naphthol, carbolic acid, sulphur, balsam of Peru and mercury.

Tar has been incorporated with green soap in the form of pix liquida, oleum fagi, oleum cadini, oleum rusci, oleum ligni fossilis empyreumaticum. Either of these may be added in the strength of one to eight drachms to the ounce of soap or its solution. These soft tar soaps are beneficial in chronic eczema, psoriasis, ichthyosis, pityriasis, scrofuloderma and seborrhœa sicca.

In the management of the same affections soft naphthol soap is of equal efficiency. Naphthol soap is made from ½ to 3 drachms or more of the drug with each ounce of potash soap. This preparation is also valuable in scabies and pediculosis.

Carbolized soft soap contains from 10 to 90 grains of carbolic acid to the ounce of soap. This combination has proved effective in seborrhœa oleasa, acne indurata, chronic papular eczema and paræsthesia. Itching as a complication of various cutaneous maladies is mitigated by the use of carbolized soft soap.

Salicylated soft soap is made in the same strength as the immediately preceding preparation. It is useful in the management of disordered function of the sudoriparous glands, as hyperidrosis and bromidrosis.

Sulphur alone has been mixed with green soap in all proportions. It has also been used in union with tar. Sulphur or sulphur-tar soft soap is decidedly curative in obstinate cases of scabies and eczema. These combinations, however, have the pronounced disadvantage of a disagreeable odor.

Balsam of Peru added to green soap in the proportion of ½ drachm or more to the ounce is an excellent application to indolent ulcers, boils and unhealthy wounds.

Mercurial soft soap is made by mixing corrosive sublimate or one of the mercurial ointments with the soap. The corrosive chloride may be used in the proportion of 10 grains or more to the ounce. Blue ointment or ointment of the mercurous or mercuric oleate may be added to the soap in the strength of one drachm to three of the former to the ounce of the latter. Sometimes, even, equal parts of each are taken. The resulting mixture is used in the treatment of obstinate syphilitic lesions, especially in debilitated subjects who are intolerant of mercury administered by the mouth. It is applicable likewise to the manifestations of early syphilis, to buboes, especially when chronic, to scrofulous ulcers, to pigmentary spots and alopecia.

Medicinal Hard or Sodium Soap.—The hard has a wider scope of usefulness than the soft variety of soap. Its value in the treatment of disease has been augmented by the addition of a great number of drugs. I have been in the habit for many years of employing medicated soda soap both in private and public practice. Like soft soap it has the power of removing thickened and hardened epidermis, dirt and morbid secretions, but is milder in its action. Nevertheless, it is capable of doing harm and must be applied with care. Precautions should be observed in its application, trying first its effect upon a small spot and if it be well borne and prove beneficial, bringing it into contact with a larger surface or with the entire diseased area. Careful observation of its effects will teach us whether it can be beneficially employed every day or less often.

The soaps which I have habitually employed are divided into cakes each containing an average weight of three and a half ounces or 1680 grains. The soaps here recommended have been manufactured under my supervision by Mr. W. H. Llewellyn, 1410 Chestnut Street, Philadelphia, Pa. The chemist having taken the greatest care in their preparation, especially to have the soaps super-fatted as recommended by Unna and Eichhoff. The soaps upon which I have learned to place the most reliance after many years experience with medication in this form, are as follows:

Alum Soap (sapo aluminis), ten per cent. or 168 grains of alum. This preparation is a beneficial agent in hyperidrosis, seborrhœa oleosa and pustular eczema, especially of the subacute form. It is of service in lupus, cancer, scrofulous and syphilitic lesions of the skin, a stimulant and astringent to ulcers and bed sores.

Arnica Soap (sapo arnica), 10 per cent. or 168 grains extract of arnica. Sore nipples, bruises, abrasions, wounds, chilblains and dandruff are improved by the use of arnica soap. It is a good application to the surface of impetigo, ecthyma, boils and carbuncles.

Boro-glyceride Soap (sapo boroglyceriti). 10 per cent. or 168 grains, 50 per cent. solution of boro-glyceride.

This is preferable to a soap containing boric acid or borax. It possesses antiseptic virtues and is val-

uable in the treatment of ulcers, wounds, suppurating, sloughing or gangrenous surfaces. It affords relief in paræsthesia, especially of the genitals, is useful in acne, seborrhœa and rosacea.

Camphor Soap (sapo camphoræ), 10 per cent. or 168 grains of camphor. Camphor soap allays the itching which accompanies eczema and chilblains.

Carbolic Acid Soap (sapo acidi carbolici), 5 per cent. or 84 grains of carbolic acid.

The effect of carbolic acid soap is first stimulant and subsequently anæsthetic. It likewise possesses antiseptic properties. This soap makes an excellent wash for inflamed and suppurating surfaces, such as boils and carbuncles, wounds and ulcers. It relieves pruritis and is of advantage in chronic eczema and psoriasis. Its smell, however, is a drawback, for which reason a naphthol or salicylic acid soap is preferable. Association with glycerine has been found to lessen the odor of carbolic acid soap.

Chamomile Soap (sapo anthemidis), 10 per cent. or 168 grains extract of chamomile.

Mildly stimulant and astringent and of an aromatic odor, chamomile soap is serviceable in intertrigo, dermatitis, seborrhœa, and in conditions attended by excessive and foul secretions. The addition of sulphur adds to its efficiency and forms chamomile and sulphur soap (sapo anthemidis sulphurisque). This soap, possessing the virtues of both its medicinal ingredients, is of value in seborrhœa sicca, especially of the scalp, alopecia, acne and when the skin is greasy and shiny.

Eucalyptol Soap (sapo eucalyptoli), 5 per cent. or 84 minims of oil of eucalyptus.

Eucalyptol Soap is stimulant, astringent and antiseptic. It may be used with good effect in cleansing unhealthy wounds and ulcers, abscess cavities and carbuncles. It is a good remedy for chapped hands, and overcomes the unpleasant odor of bromidrosis.

Naphthol Soap (sapo naphtholi), 5 per cent. or 84 grains of naphthol. This is one of the most efficient of the medicinal soaps. Its freedom from odor, its stimulating, astringent, antiseptic and slightly anæsthetic influence renders it useful in eczema, especially sub-acute and chronic psoriasis, pityriasis, ichthyosis and offensive discharges. Bromidrosis is controlled and often cured by the use of naphthol soap. It relieves or cures the bites and stings of many insects and animals. Naphthol soap is useful in herpes and scabies.

Salicylic Acid Soap (sapo acidi salicylici), 4 per cent. or 67½ grains of salicylic acid.

This preparation, which is well adapted to toilet use, is superior to a soap containing carbolic acid from the fact that it is destitute of odor and irritant properties. It is particularly indicated in a thickened condition of the integument which is often present on palmar, plantar and extensor surfaces. Salicylated soap is of value in the treatment of impetigo, ecthyma, pustular eczema, sycosis, furuncles, wounds and ulcers. It is of assistance in the management of tinea and herpes. Chapped skin and bromidrosis are also benefited by its use.

Sublimate Soap (sapo hydrargyri chloridi corrosivi), 1 per cent. or 16⅔ grains of corrosive sublimate. Sublimate soap is unlikely to excite salivation. Although I have ordered it extensively I have never known of its producing this effect. Sublimate soap may be recommended in scabies and pediculosis and for the irritation which may be present upon the body. It is an excellent application for freckles, pigmented spots, chloasma and the reddened and roughened skin which may follow the eruptive fevers, notably small-pox. It exerts an admirable tonic influence upon the skin and is a valuable local agent in improving the complexion. This soap relieves paræsthesia and the itching which is a concomitant of many cutaneous diseases. Syphilitic eruptions improve under its use.

Tar Soap (sapo picis liquida), 10 per cent. or 168 grains of tar.

Tar soap is valuable in the treatment of certain chronic affections, more particularly eczema and psoriasis. It promotes activity of the local circulation, stimulates the absorbents and reduces infiltration. It allays itching and is of service in pityriasis and ichthyosis. On account of its unpleasant odor and irritant properties, however, it may with advantage be superseded, in most cases, by naphthol soap, which is equally effective in the same conditions, and is free from the disadvantages mentioned.

The combinations enumerated, both for soft and hard soap, are those which I have found, by experience, to be the most reliable and beneficial, and which, consequently, I have most frequently prescribed. I append a catalogue of other preparations which may, upon proper occasions, be profitably employed, giving at the same time the proportion of their included drug or drugs together with their indications.

Amber Soap (Eau de Luce). This is a liquid soap, the chief ingredients of which are tincture of the oil of amber, balsam of Gilead and water of ammonia. Amber soap may be used in cases of enlarged glands, moles, warts, etc.

Balsam Soap (sapo balsami Peruviani), 5 per cent. or 84 grains of balsam of Peru.

This preparation makes a suitable wash for cleansing indolent or foul ulcers, sinuses and abscesses, wounds, etc.

Elder Flower Soap (sapo sambuci florum), 10 per cent. or 168 grains of elder flower. This soap may be suitably used in intertrigo, rosacea and sun-burn. It is a pleasant toilet preparation.

Ergot Soap (sapo ergotæ), 10 per cent. or 168 grains extract of ergot. Ergot soap is of assistance in the treatment of eczema, acne and rosacea.

Glycerin Soap (sapo glycerini), 15 per cent. or 252 grains of glycerin. Glycerin soap has been mentioned under the head of toilet soaps. Pityriasis and rough or chapped skins furnish the indications for its use.

Naphthol Sulphur Soap, (sapo naphtholi sulphurisque). 3 per cent. or 50⅜ grains of naphthol; 10 per cent. or 168 grains of crushed sulphur. Scabies, pediculosis, the bites and stings of insects, hyperidiosis, bromidrosis, eczema seborrhœa and psoriasis are the diseases in which this soap may be brought into use.

Sulphur Soap (sapo sulphuris), 10 per cent. or 168 grains of washed sulphur.

Acne and rosacea are improved by the use of sulphur soap.

Iodine Soap (sapo iodi), 3 per cent. or 50⅜ grains of resublimed iodine.

This preparation may be called into requisition in the care of scrofulous and syphilitic lesions of the skin, old granulations, etc. An iodine soap made from the Sulzbrunn iodine mineral water is said by Dr. E. Haffter, of Frauenfeld, to furnish an effective

means of removing the smell of iodoform from the hands. The iodine exists in this spring water in the form of iodide of magnesium.

Iodide of Sulphur Soap (sapo sulphuris iodidi), three per cent. of iodide of sulphur, 50⅔ grains in a cake.

Acne indurata, chronic ulcers, freckles, yellowish-brown or blackish patches upon the skin may improve under the use of this soap.

Kino Soap (sapo kino), ten per cent. or 168 grains extract of kino.

Eczema, rosacea and ulcers are conditions which may be benefited by cleansing with kino soap.

Lead Soap (sago plumbi), three per cent. or 50⅔ grains of acetate of lead.

Lead soap may be appropriately applied to boils, carbuncles, abrasions and bed-sores.

Tannin Soap (sapo acidi tannici), three per cent. or 50⅔ grains of tannic acid.

A soap containing tannic acid assists in the treatment of seborrhœa oleosa, hyperidrosis and ulcers.

Tannin-Balsam Soap (sapo tanno balsamicus), two per cent. or 33⅓ grains of tannic acid; five per cent. or 80 grains of Peruvian balsam.

The above combination is usefully applied to ulcers, wounds and chilblains.

Thymol Soap (sapo thymol), three per cent. or 50⅔ grains of crystallized thymol.

The non-irritant and antiseptic virtues of thymol render a soap of which it is an ingredient, a serviceable application to unhealthy wounds or ulcers, pustular eczema or other pustular diseases of the skin, to abscesses, sinuses, etc.

Turpentine Soap (sapo terebinthinæ compositus).

This is known as Starkey's soap. It contains equal parts of carbonate of potassium, oil of turpentine and Venice turpentine, and is capable of rendering service in chilblains, psoriasis and syphilis.

Wintergreen Soap (sapo gaultheriæ), three per cent. or 50⅔ grains of methylsalicylic acid.

Wintergreen soap is a pleasant article, applicable to eczema, psoriasis, acne, lichen, ulcers, wounds, freckles, impetigo, ecthyma, chilblains, etc.

Witch Hazel Soap (sapo hamamelidis), ten per cent. or 168 grains of extract of hamamelis.

Bromidrosis, eczema and alopecia are conditions in which we may resort to the use of witch hazel soap.

Properly made and properly applied potash or soda soap often renders efficient assistance in the treatment of diseases of the skin. The fact must not be overlooked, however, that like all other active agents, they are capable of effecting harm when improperly used. They must not be carelessly prescribed without regard to the nature of the ailment, stage of disease, condition of the patient, etc. Soap has a decided position in dermato-therapy. It would be, however, irrational to expect too much from these preparations. They are to be looked upon as valued assistants only, seldom able, unaided, to effect a cure, more than this ought not to be anticipated. By not expecting benefit from their use beyond their power as assistants we learn to employ them with judgment and guard against disappointment from their failure, in cases to which they are not adapted.

The super-fatted soap introduced by Unna, of which mention was made when speaking of toilet soaps, is now made by the addition of a mixture of lanolin and olive oil instead of olive oil alone as formerly recommended. The proportions in which these ingredients are now mingled with the soap mass are two per cent. of lanolin and three per cent. of olive oil. The presence of lanolin, a soft animal fat with no tendency to become rancid, of ready absorption by the skin and miscibility with water, confers additional value upon the product. A higher percentage of lanolin, however, diminishes the lathering property.

Various medicinal agents have been incorporated in this super-fatted article and employed by Unna, Eichhoff and others, who report very favorably of their advantages. From the lists and reports lately issued by the latter authority I have selected the following as an addendum to the present paper:

Aristol Soap, two per cent. of aristol.

This is recommended in psoriasis, eczema, leg ulcers, ulcerated lupus and gummata.

Benzoic Soap, five per cent. of benzoin.

A good toilet soap, useful in intertrigo and seborrhœa of the scalp.

Creolin Soap, five per cent. of creolin.

Creolin soap is of benefit in the treatment of scabies and contagious impetigo.

Creasote Soap, two per cent. of creasote.

This preparation may be used in lupus.

Hydroxylamin Soap, three per cent. of hydroxylamin.

Adapted to the treatment of lupus, psoriasis, tinea and parasitic sycosis.

Iodoform Soap, five per cent. of iodoform.

Iodoform soap is beneficial in chronic and syphilitic ulcers. When used in conjunction with massage it may promote the absorption of exudations.

Iodol Soap, five per cent. iodol.

An effective substitute for iodoform soap.

Menthol Soap, five per cent. of menthol.

Especially indicated in paræsthesia and urticaria.

Menthol Eucalyptol Soap, five per cent. of menthol with three per cent. of oil of eucalptus.

A beneficial soap in rheumatism, gout, neuralgia, urticaria, itching of the skin and as a disinfecting soap to wounds and ulcers.

Pine-needle Oil Soap, ten per cent. of pine needle oil.

This is a valuable remedy in tinea, favus, eczema, psoriasis and assisted by massage, in chronic rheumatism.

Quinine Soap, five cent. of quinine.

A mild stimulant soap in acne, after and during fevers, in dandruff or seborrhœa of the scalp.

Resorcin Soap, five per cent. of resorcin.

Of utility in seborrhœa, eczema and erysipelas.

Resorcin-Salicylic Soap, five cent. of resorcin and three per cent. of salicylic acid.

A useful soap in acne, seborrhœa and in parasitic skin diseases.

Resorcin-Salicylic-Sulphur Soap, five per cent. of resorcin with three per cent. each of salicylic acid and sulphur.

Resorcin-Salicylic-Sulphur-Tar Soap, five per cent. of resorcin with three per cent. each of salicylic acid, sulphur and tar. The two last named soaps are serviceable in eczema, psoriasis and parasitic skin diseases.

Salol Soap, five per cent. of salol.

This is an effective soap to employ in chronic eczema, psoriasis, acne, excessive secretion of perspiration and in fœtid sweating.

Salicylic-Creasote Soap, five per cent. of salicylic acid and two per cent. of creasote.

V.1
189

A valuable soap for chronic eczema, psoriasis, and in excessive secretions of perspiration in different parts of the body.

Sulphur-Camphor-Peruvian-Balsam Soap, five per cent. of sulphur, and three per cent. each of camphor and Peruvian balsam.

A useful soap in acne, seborrhœa, chronic eczema and psoriasis.

Sulphur-Salicylic Soap, five per cent. each of sulphur and salicylic acid. An especially serviceable soap in all chronic skin diseases, as eczema, psoriasis, ichthyosis, acne, and rosacea.

Sulphur-Salicylic-Tar Soap, five per cent. each of the preparations named.

A valuable combination in all chronic skin eruptions.

Thiol Soap, five per cent. of thiol.

A beneficial soap in all parasitic diseases, also useful in eczema, acne and rosacea.

Other remedial agents and several combinations of medicaments have been used but they are such as have been described in the foregoing portions of this paper and therefore, need not be repeated. According to the nature of the disease, its severity and obstinacy or the condition of the patient, the surface may be simply irrigated with the soap solution, the froth may be permitted to dry *in situ* or it may be retained by means of impermeable dressings.

1519 Walnut Street, Philadelphia.

AN INTRODUCTION TO THE STUDY OF THE PHYSICAL BASIS OF VOLUNTARY ACTION, MEMORY, EMOTION AND THOUGHT.

An address delivered before the Anthropological Society of Yonkers, N. Y., March 4, 1892.

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Mr. President, and Ladies and Gentlemen: I will ask your attention to a few introductory remarks on the psychical life of man before proceeding to discuss my main topic, which is the physical basis of voluntary action, memory, emotion and thought.

PART I.

A psychological investigation of man is necessary for the reason that though anatomy and physiology furnish us with stronger grounds in favor of the unity of mankind as a species, than the arguments advanced for the opposite theory they cannot alone be considered as decisive, and even if they were conclusive they would lose their validity if it could be proved there existed permanent psychical differences, presenting impassible barriers to the development of individual races. If it is somewhat difficult to arrive at a just estimation of the mental capacity of individuals, it is still more difficult to estimate the psychological capacity of whole nations and races. Individual nations occupy at different periods, different scales of development, and though from the actual performances we may arrive at an estimation of the faculties which produced them, they would seem to vary at times. In addition to these difficulties, there is the circumstance that the external and internal causes, which in one race affect the transition from a primitive to a civilized state, are as much hidden from us as the causes which prevented the development of another race, and apparently fixed it in the position which it once occupied. All this might make us inclined to assume a different endowment for individual races, particularly as primitive man stands in such striking contrast to civilized man, if we forget that we once occupied a similar position. The religious customs and legends of uncultured nations are too apt to be treated as curiosities, instead of taking pains to properly understand them, so as to deduce from them proper inferences with regard to psychical peculiarities or a proper characteristic of the uncivilized man. It is a hasty assumption that the psychical peculiarities of nations correspond with their physical characters, especially with the structure of the skull. History shows us the overthrow of nations who were once highly cultivated, possessed of finely formed crania, by races of inferior mental capacity and less developed skulls. The larger cranial capacity of the whites did not prevent the Turks and Magyars who entered Europe, from obtaining great conquests and becoming permanently settled. The old Egyptians possessed very small crania. The inhabitants of Tierra del Fuego, the Esquimeaux and the nations of Van Dieman's Land have uncommonly large heads. The Kalmuck and Tartar have larger crania than the civilized European, while the Laplander is particularly distinguished by a large skull. The same or similar intellectual and moral dispositions coëxist with different cranial formations, and different dispositions, with the same or similar cranial shape and capacity. We see one and the same race proceeding from barbarism to civilization, and again relapse from its high state and its capacities decline, but as the cranial shape remains the same, the assertion that the intellectual faculties are dependent on it is incorrect. The capacity of the cranium does not indicate the amount of mental endowment. As in physical respects, all men may be considered as belonging to the same species, if it can be proved that the greatest physical differences occurring among them are not more considerable than such as may have arisen in the same people in the course of time; so we can, in psychical respects, count all as belonging to the same species, if it can be shown that the greatest differences of their mental development and their intellectual and moral culture, are not greater than the differences of the degrees of civilization, which the same race passes through in its history. Of course, it would be absurd to suppose that races passing through different stages of development should be capable of the same intellectual performances. The capacities of a race may change in time, and we have to decide whether under favorable circumstances, in the course of time, all nations and tribes are capable or not, of reaching the same degree of mental development. We have to examine as to the greatest differences existing in the various races, as regards mental development and the greatest changes which, in this respect, take place among the same race. We will start from the assumption that, as in the life of individuals, so also in that of nations, all cultivation is something secondary, resting upon a gradual progress to a better state than was the primitive or natural state of man. This natural state marked by the absence of all cultivation, we must imagine to have been the original con-

dition of every race. A mode of existence in which all intellectual and moral forces were yet undeveloped. We are compelled to proceed from the assumption that all men were originally psychically equal, but we have a possible supposition that some—owing to superior predisposition, or in consequence of an innate specific impulse, have more easily worked their way out of that uncultured period than other races. We must first find out the specific characters of man, *i. e.*, those which distinguish him from the brute, in order to learn whether or not these characters pertain to all races and individuals and secondly, whether within these characters which constitute the psychical essence of man there exist permanent differences. In order to arrive at a correct estimation of the differences between the various stocks in mental development, we shall have to take into consideration the circumstances which induce man to leave the natural state; whereby we may learn whether the existing differences in development are the result of specific differences in mental endowment, or the consequence of different environment, mode of life, contact with other nations. In short, of their historical events, or possibly of the combination of both.

SPECIFIC CHARACTERS OF MAN.

The physical differences which distinguish man from the brute are too well known to need mention. With regard to his psychical life the differences are not so manifest. Some animals possess a certain perfectibility, such as the dog, horse and elephant. By the influence of man they reach a higher degree of mental culture than they originally had. Their sphere of thought is evidently capable of enlargement beyond what appears to be its natural limits. Man learns from experience, but so do animals. The word "instinct," which is, I think, heredity of memory, conceals in the psychical life of animals more intellectuality and less mechanism than usually is assumed. The teachings which man derives from experience are not only more comprehensive, but they exercise a deeper influence on the whole formation of his external and inner life, than is the case with the brute, and enable him to occupy a dominating influence even in the lowest grade of civilization. Just as the civilized man conquers the savage, the latter overpowers the brute, not so much by physical as by mental force. Language as the expression of emotion, is a specific human peculiarity. Even the most barbarous nations possess a language with a more or less grammatical structure. The possession of language establishes a near relationship between all races in psychical respects, agreeing, as they do, in the most essential peculiarity of intellectual life, namely, in the power of arranging the relations of substantive separate ideas, so as to give them a definite oral expression. In the presence of this common feature of the human mind, all other differences lose their importance and make us more inclined to consider them as merely differences in degree; the more so as there are races who, despite their mental degradation, possess a language by no means undeveloped as regards grammatical structure. A third chief peculiarity of man is his social character, by which men associate together, and in tribes and families. The specific psychical activity of man is seen therefore in three directions: 1. In availing himself of surrounding natural phenomena for his own objects, profiting largely by experience. 2. In giving outward expression to his internal feelings, either by language or other visible signs, and 3, in his social relations, with their concomitant rights and property, leading to certain gradations in society, and to a closer attachment to his own race.

Though we find here the elements from which science, art and morality gradually arise, there is yet another principle, leading to a higher spiritual development, viz.: the religious element. This is nowhere entirely wanting, and though it may manifest itself in the crudest form, its influence can be traced in every race. The investigation of the greatest differences existing in the psychical life of mankind has proved unfavorable to the assumption of specific differences, which we are warranted in considering as merely fluctuating, and traceable to the opposition of nature and cultivation, and if we examine the degrees intermediate between the natural and the civilized state, we shall see that the progressive mental development of some races, and the remarkable stability of others, essentially depend upon other causes than on the differences of their original mental endowment. The psychical endowment of the various races was most probably originally the same, or nearly so, and the earlier or later emergence of individual races from the primitive state, essentially depended on the natural and social conditions in which they were placed; and by these external circumstances in their manifold concatenations, the extent and rapidity of their development is mainly determined. I must refer here to a principle I have already touched upon, viz.: that the development of mankind in the course of time, produces a favorable predisposing influence on the psychical endowment of the progeny, which increases with the progress of civilization, which predisposition must be less, the nearer a race is to the primitive state. This partly explains why we see so many races apparently stationary, whilst others proceed rapidly from a certain point. The greater natural inclination and capacity for civilization manifested by some races is nothing original, but something acquired in the course of their development, which, under favorable circumstances, might have been equally acquired by races who appear, at present, less capable of civilization. With regard to the development of public law and government, we cannot but recognize in climate, mode of life, density of population and its intermixture with foreign elements, and the development of mental activity, powers which are but remotely governed by laws, whilst they undoubtedly influence the formation and efficacy of the latter. The security of private property is the most important of all legal institutions, and the very basis of civilization. Its origin among primitive peoples and its development, depend chiefly on the relations between the modes of life and the necessities of the population, and the area and natural conditions in which they live. The sum of the effects on civilization by men living in communities are, the discipline of the masses, they being gradually habituated to obedience and self-control; greater protection for life and property, which enables the people to devote their activity to other purposes; the establishment of a community of interest and action against external powers, etc. One circumstance which plays no little part in the progress of civilization, is the emergence of highly gifted individuals from the mass of the people, who, as rulers, heroes or law-

V.1
189

givers, transform the position of the people, change its relations with other nations, regulate its internal constitution, expand its horizon in science and art, improve their morals and direct their attention to nobler objects. It is by individual, great teachers of humanity, that the progress of the mass is mostly effected. There must, however, be a mental susceptibility among the people, and a happy combination of circumstances, in order that the talents of an individual may lead to important results and have their full effect on civilization. The progress of knowledge is a great cause to which civilization owes its development and duration, and the intellectual development of a race is the standard of its civilization. The various degrees of culture in various races depend in a much greater degree on the mode of life, the historical events and other elements, than on their original mental endowment, which, however, does not exclude the latter and which possibly, also, may have its influence. Barbarism and civilization prevail, probably, among all peoples of the earth, and powerful impulses are required to change their conditions, but as regards the further development of already partially civilized peoples, there is this circumstance in their favor, that in consequence of the civilization already acquired, the progeny inherit better predispositions than these possessed by their progenitors. The study of the psychological nature of man, shows that there exists an extremely gradual variability in the mental development of races, which justifies us in considering the greatest differences in the states of civilization as merely different in degree. That the conditions for mental development are essentially the same in all races, and there is no good or sufficient reason to assume specific differences among mankind. The great value of civilization above the primitive state lies chiefly in this, that it places human life upon a different foundation from that in which it took root. In the natural state, it was the individual interest, which, in the form of the instinct of self preservation and sensual enjoyments, acted exclusively on man, whilst in the civilized state, the general interests begin to predominate. Physical enjoyment is in its nature confined to the individual, but psychical advantages have the tendency to become common property. Civilization is the development which nature designs for man, in which all men participate, though the parts which they may take in it may greatly differ. Man's mental efforts gradually predominate over the physical, and are made that they may benefit the world. When we look at the great differences of races, and the immense influence of natural conditions and climates which preserve these diversities, we become convinced that there is little probability that a uniform civilization will ever prevail among all races of the earth. Nature seems inclined to preserve a diversity in the physical and psychical characters of mankind. We must not infer from this, however, that some races are intended by nature for civilization and others for barbarism. The progress of civilization is mainly effected by labor, and this is physical, social or intellectual, accordingly as it is directed to physical well being, the preservation of social order or the promotion of knowledge. Our civilization is too artificial and abstract, immediately to attract uncivilized nations, and such races must first pass through a long series of transitional stages before our culture becomes accessible to them. In order to arrive at it, the vital power and energy of a people must neither have degenerated into idleness and sensual enjoyment, nor have been exhausted by misery and distress. Civilization must progress slowly or it will retrograde. All history shows this.

PART II.

I come now directly to the discussion of the physical basis of voluntary action, memory, emotion and thought.

A study of the physiology of the nervous system shows us that nerve-force is generated in or by the vesicular neurine, and that the tubular or fibrous neurine conducts it. But, what is the nerve-force of the brain? And in what manner is its vesicular neurine active? The result of its activity we know, namely, the ability to receive sensations of all kinds; the power of comparing these sensations and of storing them for comparison; the power of combining these sensations in new arrangements, of imagining—not, indeed new sensation—but combinations of them; the power of feeling emotions and propensities.

The activity of the vesicular neurine of the brain is the occasion of all these capabilities and powers. The little cells are the agents of all that is called mind, of all our sensations, thoughts and desires; and the growth and renovation of these cells is the most ultimate condition of mind with which we are acquainted. If there are more profound conditions they are beyond our knowledge. Now how is the nutrition of the brain-cell effected?

The grey substance of the brain contains millions of vesicles, lying in a semi-fluid granulated substance (stroma), and bound together by a minute network of capillary blood-vessels and fine areolar tissue. Now, the fundamental truth of physiology being the activity of the cell, and this activity being accompanied by its decay, and demanding its renovation; the important points in the relative position of the brain-cell are, first, its relation to the nerve fibre, from which it receives and to which it conveys impressions, the taking and giving of which are the main causes of its exhaustion; second, its relation to the blood capillary, which exudes a plasma in which the cell is bathed and renovated, and from which new cells are formed to replace those which are finally exhausted. Respecting the first of these relations, so far as the individual cell is concerned, it would appear, that morbid results could only arise from stimulation so excessive as to hasten the progress of decay beyond the power of reparation. Respecting the secondary relation, numberless circumstances may occur to interrupt or prevent the growth or reparation of the cell. All states, either physiological or pathological, of the brain-cell, are occasioned by influences impressed upon it either by the nerves or blood vessels, with which it stands in such intimate relation. Whether any changes can be self originated is doubtful. The laws of its life, transmitted to the cell from the parent organism, include, indeed, the conditions of perpetual change, but the cause of change must be sought for in the nerve, or capillary.

Voluntary action.—What happens in the simplest form of voluntary action? A baby sees what it wants and seizes it. There is a particular impression on the sense of sight, a conduction of the molecular motion caused thereby to a special nerve-centre, and the consequent excitation of a special perception as the ingoing process; then, as the outgoing process, the

transmission of liberated energy along motor nerve to muscle and a consequent adaptive act. What we call a reflex action in the mental plane. Voluntary action is a power of better quality and higher dignity in man than in the animal or the baby, but even in its first stage of evolution the animal and the baby soon learn to voluntarily restrain themselves from doing what their first impulse was to do, of two courses to choose the best, the path of prudence or duty in preference to the path of natural proclivity. They are taught by adults and where the animal or the baby withstands the impulse to do what it wants to do, there is, along with the special perception, the immediate stimulation of the associated nerve centre that has suffered and registered the memory of the suffering; and the consequence is, the resistance to, or inhibition or check of the instant impulse and the prevention of the movement. It is the physical basis of morals, I think, that one of two associated nerve-centres may be excited to check or inhibit the other. It is by virtue of this physiological property that structure is moulded along the lines of function, and that the ease of performance which we call habit is acquired. A voluntary action, then, is a motion or group of motions accompanied or preceded by volition, and directed toward some object. Every such action comprises the following elements: knowledge, motion, choice, volition, intention and thoughts, feelings and motions adapted to execute the intention. These elements occur in the order in which I have enumerated them. Suppose one of you about to act. Your knowledge of the world in which you live and of your own power,assures you that you can if you like, do any one or more of a certain number of things, each of which will effect you in a certain definite way, desirable or undesirable. You can speak or be silent. You can sit or stand. You can read or write. You can keep quiet or change your position to a greater or less extent and by a variety of different means. The reasons for and against these various courses are the motives. They are taken into consideration and compared together in the act of choice, which means no more than the comparison of motives. Choice leads to determination to take some particular course, and this determination issues in a volition, a kind of crisis, of which every one is conscious, but which it is impossible to describe otherwise than by naming it, and as to the precise nature and origin of which many views have been entertained which I need not here discuss. The direction of conduct towards the object chosen is called the intention or aim. Finally there takes place a series of bodily motions and trains of thought and feeling fitted to the execution of the intention. I think this is a substantially correct account of normal voluntary action. It would be difficult to attach any meaning to the expression "voluntary action," if either motive or choice, or a volition, or an intention, or actions directed towards its execution were absent, though they may not always be equally well marked.

Mental disease or disease of the brain, powerfully affects, or may affect, the knowledge by which our actions are guided; the feelings by which our actions are prompted; the will by which our actions are performed, whether the word will is taken to mean volition or a settled judgment of the reason acting as a standing control on such actions as relate to it. The means by which these effects are produced are unnatural feelings; delusions or false opinions as to facts; hallucinations or deceptions of the senses; impulses to particular acts or classes of acts; and in some cases,it is asserted,a specific physical inability to recognize the difference between moral good and evil as a motive for doing good and avoiding evil.

The brain and nervous system are the organs by which all mental operations are conducted. When a man either feels, knows, believes, remembers, is conscious of motives, deliberates, wills,or carries out his determination, his brain and his nerves do something definite, though what that something is, what parts of the brain are specially connected with particular mental functions, by which part a man remembers, by which he conceives, and how any part of the brain acts when any of these operations is performed, no one knows. All that we know is, that one set of nerves carry to the brain a variety of impressions of external objects and occurrences, that these impressions excite emotions which affect many parts of the body in different ways, and which in particular affect the brain; that the brain in some manner deals with the impressions, whether of perception or of emotion, which it receives, during which process the man is conscious of what we describe as emotion, motive, deliberation and choice, and at the moment when the man is conscious of volition, some discharge from the brain, through a different set of nerves from these which convey impressions to it, acts on the various parts of the body in such a manner as to cause those groups of bodily motions which we call voluntary actions.

The functions of feeling, knowing, emotion and willing are mental functions, and as we have seen, the ultimate condition of mind with which we are now acquainted consists in the due nutrition, growth and renovation of the brain cells. We have seen that the brain cells are nourished from the blood, and this nutritive renovation takes place probably principally, if not entirely, during sleep, and anything that interferes with the uniform and healthy interchange of nutritive plasma passing from the vessels to the cells, and if the fluid cell contents in a state of involution or degenerative metamorphosis passing from the cells to the vessels, deranges the intimate connection between the nervous and vascular systems through which their most important functions are performed, producing at once grave disturbances of the nervous system which may affect voluntary action and also memory, emotion and thought. In fact the elementary disturbances of the brain functions which we meet with in disease of the mind, involve processes in the emotional sphere; processes in the sphere of the conceptions, comprising the reason and memory, and processes in the psycho-motor sphere, the impulses and the will. The result of these morbid processes is to induce morbid delusive conception or perception of subjective origin, causing change of mental character as compared with former self or normal ancestral type, through organic conditions originating in disease within the system, external motives playing but a secondary part when they influence at all the mental conduct. To have normal voluntary action, memory, emotion and thought we must have a normal cerebrum with a proper conformation and development of hemispheres; normal coverings or membranes of the brain, with blood vessels of the normal size; the convolutions of the brain must be developed sufficiently; we must have, in short, free-

dom from any and all abnormalities either of structure or function of the centric nervous system. Any disease, malformation or interference with these parts by mechanical, chemical or vital causes may produce disease and interfere with voluntary action, memory, emotion and thought. Criminal impulses may easily haunt a mind naturally innocent and pure, when the mental functions of feeling and knowing, emotion and willing are not performed in their regular and usual manner by reason of diseases of the nervous system. It is a very simple thing to get up a false action of conception or judgment, a defective power of the will or an uncontrollable violence of the emotions and instincts; first, by primary disease or defective development of the encephalic centres, second, by disorder of, or developmental changes occurring in other organs than the encephalic centres and third, by stimulants and narcotics.

Among the predisposing causes which disturb memory, emotion and thought we find hereditary predisposition; the great mental activity and strain upon the nervous system that appertain to the present age and state of civilization; great difference of age between parents, influence of sex, of surroundings, pre-natal causes, physiological crises, epilepsy and intemperance. Among the exciting causes, may be mentioned trouble and excessive grief, intemperance, excessive excitement of whatever kind, epilepsy, disordered physical functions, fevers, injuries to the head and spine, sunstroke and overwork. I think fifty per cent. of all the disturbances of memory, emotion and thought may be traced directly or indirectly to intemperance.

To have voluntary action, memory, emotion and thought of the highest type, races should strive to get a physique and a stability of nerve tissue capable of meeting successfully the demands that climate and civilization make. Great attention should be paid to environment, diet, fresh air, exercise, proper rest, sleep and tranquillity of life. Respecting emotion and thought, there is a realm of inquiry of unprecedented interest to the student of psychology and of immense importance in many practical relations of life. I refer to the effect of the hereditary taint of insanity on man and his offspring. The brain comes into the world with the same imperfections and deficiencies, the same irresistible tendencies to disease or perversity of action which have long been observed in regard to other organs. We must necessarily take this into account in forming theories of human action, and it will throw new light on many a dark problem of human conduct.

Emotion and thought, conduct and responsibility are seriously affected, and responsibility in particular may be impaired, by that cerebral condition—neither of health nor of disease as these terms are usually understood—which is produced by tendencies to disease or ancestral vices. There is a prevalent mistake of regarding no disease as hereditary that does not descend fully formed directly from parent to child. This is not so, for the force of inertia often causes disease, and especially mental disease, to remain latent for an entire generation and probably more. To lie concealed however, does not mean necessarily to be destroyed. Disease is an ultimate product, elaborated from simpler elements during a period that may embrace more than one generation; its essential element, considered in any stage of its progress, is imperfection, defect, abnormal deprecia-

tion, to be manifested under the process of hereditary transmission in every variety of form. This leads us to a correct theory of the production of disease of the mind. Under the adverse influences of a highly civilized condition, the cerebral system suffers in common with the others; while the signs of such suffering will generally be found only in the mental manifestations, varying all the way from some slight peculiarity or anomaly of character to the gravest moral or intellectual impropriety. The defect, under the predominant influence of a different blood, may not be witnessed in any succeeding generation. More frequently, however, even in spite of this conservative influence when present, it does make its appearance again, in one or more of the descendants, in forms more or less severe than the original.

Memory, emotion and thought and also character and conduct are determined, in a great degree, by the original constitution of the brain and nervous system and I feel sure that as you all are led by the teachings of science and the stern facts of observation, you will be disposed to make a proper account of those cerebral qualities which imply a deviation, of some kind or other, from the line of healthy action. That it will be in accordance with your philosophy to see in them an explanation of those strange and curious traits which are utterly inexplicable on the principles that govern the conduct of ordinary men, and I feel sure that you have been led far enough in the paths of science by your able President, to find in them a clew to some of the mysteries of human delinquency. Only the more demonstrative forms of mental disease are supposed to be capable of affecting the legal responsibility of men, but you all well know, that a person who in most respects, is rational and observant of the ordinary proprieties of life may be so completely under the influence of disease as to be irresponsible for many of his acts. The course of emotion and thought, the sense of moral distinctions, the actual conduct may all be greatly affected by the influence of such imperfection. We are bound by a sense of justice and the claims of science to make some account of it in forming our estimates of character and fixing the limits of responsibility; and knowing that an individual is descended from a line of progenitors abounding in every form of nervous disorders, shall we think it strange that some portion of it has come to him, and knowing that the quality of the brain is necessarily affected by such disorder, shall we not seek in this fact for an explanation of what we could not explain upon any ordinary principles of human conduct? The hereditary taint of insanity appears in various stages of progress, from the lowest to the highest grade of intensity, and under a variety of forms and aspects. Their effect on the mental capacity and vigor and on the complexion of the moral sentiments and determinations; their connection with the habitual and transitory impulses, with the power of resisting evil and pursuing good, are points we need to study more thoroughly in forming our estimates of character, especially in reference to moral and legal reponsibility. They are agencies which should no less engage our attention and be no less effective than education, social influences or mental endowments. Defect of brain, necessarily in one way or another affects its functions, causing changing and misleading subjective impressions of the person affected, coupled with the resultant change of conduct or of

reasoning, or both. There is morbid delusive conception or perception of subjective origin, causing change of mental character as compared with former self or normal ancestral type, through organic conditions originating in disease within the system, external motives playing but a secondary part when they influence at all the mental conducts. Change of character is the ultimate symptomatic expression of mental disease, change of mental conduct the immediate, and repetitions of conduct make character.

We have made a psychological investigation of man; have made an attempt at an explanation of the physical basis of voluntary action, memory, emotion and thought, and finally have tried to explain some of the great underlying truths that govern mental pathology. I have been guided by both an active and a thoughtful acquaintance of the subject, the result of experience in the field of diseases of the nervous system, and I crave your indulgence for any shortcomings while thanking you for your attention and the honor you have shown me in inviting me to appear before you this evening.

128 Park Place, Brooklyn, N. Y., March 4th, 1892.

A RECORD OF CASES TRACHEOTOMIZED.

Read before the Northeastern Medical Society of Michigan, March, 1892.

BY FREDERICK LOHRSTORFER, M.D.,
OF PORT HURON, MICH.

While intubation will in all probability render the need of tracheotomy less frequent in the future, the latter must and will always remain the classical operation and *dernier ressort*. Intubation has a rather more limited range of usefulness than tracheotomy, being most applicable in very young children. Even after O'Dwyer's tube is inserted, the surgeon must be in continual readiness to perform tracheotomy, lest the former operation prove insufficient. O'Dwyer's tubes are liable to become displaced; secretions dry in them and are not easily removed; sometimes they occasion difficulty in swallowing; in inserting them the membrane may be detached and pushed into the lumen of the trachea, blocking respiration completely, and sometimes necessitating a hasty tracheotomy to save the patient from immediate suffocation. The pressure of the tube in the larynx and trachea often causes ulceration. Extension of the membrane beyond the end of the tube may eventually require tracheotomy to be supplemented to or substituted for intubation. However, my object is not to compare the respective merits of these two procedures. Both have their advantages and disadvantages, and neither should be used to the exclusion of the other.

I wish to present to the members of this convention a series of seven cases of tracheotomy performed in the year 1890. Diphtheria was quite prevalent in Port Huron at that time, and many cases presented the laryngeal type of the disease, necessitating operative interference. They all showed marked obstruction both to inspiration and expiration, and no reasonable hope could be entertained in any of them of recovery without operation. A skilled nurse was placed in charge of every case, and contributed largely to the favorable results obtained. The medicinal treatment consisted in the administration of tinct. ferri chloridi, and potassium chlorate or bichloride of mercury, with strychnia and alcoholics as heart tonics. Peptonized milk diet. An even temperature of 80° F. was maintained, and instead of keeping the whole room filled with vapor from boiling water, a steam atomizer spraying lime-water was allowed to play on the tube a large portion of the time. I found the little ones take very kindly to this procedure, and it is much easier and more effective in its application. Solvents and antiseptics can thus be readily used without causing any distress. I make the following transcriptions from my case record:

Case 1.—Carrol K., æt. 4. On April 4 found child up and playing around the room. Parents said he had been sick for four or five days with a bad cold. They did not pay much attention to it until a croupy cough set in, when they decided to send for a physician. On examination, I found an extensive, well defined membrane covering the uvula and both tonsils. No fever. Pulse moderately accelerated. Diagnosis, diphtheria. Vigorous treatment at once instituted, both with internal medication and by the use of the steam atomizer. The symptoms gradually became more urgent, difficulty in breathing increased every hour, and tracheotomy was evidently indicated. The operation was performed on Sunday, April 7, at 2 P.M., Drs. Clancy and Platt assisting. Operation was uneventful. Patient rallied nicely from chloroform, and manifested a desire for something to drink. A glass of milk was offered, of which he drank eagerly. The dyspnœa symptoms had all disappeared, and patient slept for several hours. The steam atomizer with lime-water was kept playing on the tube almost continually for several days. During this time he breathed easily. On the third day after the operation it became apparent that the membrane was extending down into the trachea. The pulse at the same time became faster and feebler, and patient was evidently sinking. At 5 A.M. of April 10, eight days after my first call and on the fifth day after the operation, patient had a light convulsion, during which he died.

Case 2.—Johnny M., æt. 7. January 1. One of a family of seven children. Was first called to attend in the family on December 20, 1889. Diagnosis, diphtheria. Children were all attacked in succession. As soon as one recovered another would be taken down. Patient was the fourth one attacked. Symptoms gradually became more urgent. Cyanosis appeared, and respiration became very stridulous. All the muscles of the chest and neck brought into play to secure the necessary air. Operation performed on Sunday evening, January 5, 1890, at 11 o'clock, Dr. McDowell assisting. Patient rallied quickly from chloroform, and slept several hours. Tube covered with antiseptic gauze and kept warm and moist. Steam atomizer used on tube fifteen minutes of every hour, night and day. Full doses of iron and chlorate of potash internally. Pill strych. sulph., $\frac{1}{100}$ gr. tid., as heart tonic. Pulse frequently as high as 160; moderate fever at times. Profuse discharge from tube. On fifth day after operation could breathe a little through mouth on closing up tube. Instrument removed, and wound covered with antiseptic gauze. Steam atomizer with lime-water continued as before. Bichloride of mercury substituted for potassium chlorate internally. Appetite good; discharge from wound very free. Passage through larynx gradually reëstablished. On sixth day wound drawn tightly together with adhesive strips. Breathing through mouth rather difficult, but

possible. Aphonia still present. From now on there was a steady improvement, and in two weeks after operation external wound was entirely closed, some bronchitis remaining. Huskiness of voice persisted for two months after operation.

Case 3.—Algin S., æt. 12, January 23, 1890. On Sunday, January 23, at 11 A.M., was hurriedly called to perform tracheotomy on patient. On examination found patient breathing with great difficulty, and cyanosis marked. He begged me to hurry and do the operation, as he was choking to death. Dr. Campbell was in attendance, and stated that patient had been sick for a week past. Laryngoscopic examination showed larynx packed full of grayish membrane. No membrane in pharynx or on tonsils. Diagnosis, diphtheria. Chloroform immediately administered and tracheotomy performed, assisted by Drs. Mills and Campbell. Patient rallied nicely and wrote on slate that he felt very comfortable, and expressed his gratitude for the relief afforded. At 1 P.M. of the same day I called again, and found him breathing easily. Pulse fair, slight fever. He expressed himself as feeling very well. About fifteen minutes after my departure he suddenly arose from the bed, and seizing the nurse around the waist, he whispered in terror, "Oh, I am going, I am going." There seemed to be no obstruction in the tube, as he breathed easily. He died a few moments after, evidently of heart paralysis. A post-mortem examination on the following day showed a thick, tough membrane lining the interior of the larynx and trachea, and extending down into the bronchial tubes, forming a perfect cast of the parts affected.

Case 4.—Freddy W., æt. 5, October 30, 1890. One of a family of six children. Patient had been under the care of another physician for several days previous. He was breathing heavily at the time of my first visit, requiring all the auxiliary muscles of respiration. On examining the fauces only slight traces of membranous patches could be detected, but scars on the tonsils showed that a membrane had been present, but had already become detached. Voice entirely lost. Cough croupy. Father stated that he frequently had choking fits, and he was afraid he might choke to death in one of these. Features anxious, pulse 140. Diagnosis, laryngeal diphtheria. Treatment immediately begun with steam atomizer, using a solution of lime-water and sulpho-calcine. In the evening called in Dr. Mills as counsel. Obstruction to respiration more marked than in afternoon. Face of an ashy hue; patient very restless; pulse 160. Immediate operation advised. Tracheotomy performed at 9 P.M., Dr. Mills assisting. Patient rallied well from chloroform, and breathed quietly. Bichloride of mercury and tincture of iron in full doses every hour. Pill strychnia sulph., $\frac{1}{60}$ gr. tid. Steam atomizer every hour for a period of fifteen minutes, using a solution of sulpho-calcine. Discharge from neck very free for the ensuing week. Tube removed on fourth day after operation, although but little air could be gotten through the natural passage. One hour after operation no air could be drawn through mouth on closing tube with finger. Discharge gradually decreased. Opening through pharynx became reëstablished, and wound was drawn together with adhesive strips. Patient made a slow recovery, remaining pale and anæmic for two months afterwards.

Case 5.—Willie M., æt. 5, November 15, 1890. Patient of very slight build, pale and thin. History of throat trouble for a week past, but parents had neglected to call a physician. Considerable obstruction in respiration. Pulse 140, and fever. Active treatment at once begun. November 16. Patient passed a restless night, dyspnœa becoming marked. Pulse still very weak and rapid; face assuming a sickly ash-colored hue. On afternoon of same day, Sunday, November 16, brought Dr. Mills in as counsel. Operation decided upon. Tracheotomy immediately performed. Patient acted badly under anæsthetic, and several times it became necessary to stop and inject stimulants for heart failure. When operation was completed patient appeared to be dead. Brandy freely injected and artificial respiration kept up for some time. Patient slowly rallied, but outlook very dubious. Expected to find him dead on return in evening, but found him somewhat better. Same treatment as in previous cases, except that patient would voluntarily drink large quantities of whisky, as high as a pint a day being taken. Discharge from tube very free. Instrument removed on fifth day. Patient made a good recovery.

Case 6.—Karl K., æt. 4, November 23, 1890. On my first visit found three of a family of five children down with diphtheria. Two already had laryngeal croup, with a high degree of obstruction. Family of a scrofulous and perhaps syphilitic diathesis, being covered with various kinds of eruptions. One child died immediately after my first call, being so far gone that no treatment was attempted. Patient was immediately operated upon, Dr. Mills assisting. Patient acted badly under anæsthetic. More than ordinary difficulty was encountered, on account of a short, chubby, fat neck; trachea deep down in neck. Tube finally inserted, and free respiration established. Slight localized convulsions made their appearance soon after completion of operation, but were controlled by chloroform and hypodermic injections of camphorated oil. He finally rallied, and did nicely for two days. Same medicinal treatment as in previous cases. Steam atomizer used as well as possible, but patient very intractable, and little accomplished with it. Food and medicine could only be administered by force. Pulse rapid and weak; temperature 103° F. On the evening of November 25, two days after operation, I called and found child apparently doing well. He was sitting up in bed, but acted very sullen. Fifteen minutes afterward, while the nurse went out for a short time, patient suddenly died, probably from heart paralysis, as there was no obstruction in the tube. Post-mortem examination refused. Another child 3 years old was very ill by this time, but operation was rejected, and it gradually choked to death twenty-four hours afterward. A 6 weeks old babe also died one week from the last one.

Case 7.—Lulu M., æt. 4, December 5, 1890. Case seen in consultation with Dr. Campbell. She had previously been attended by another physician. When Dr. C. first saw patient, she was breathing with great difficulty. A cursory examination revealed diphtheria of the larynx, pharynx and nose. Pulse pretty good, but considerable drowsiness. Operation performed at 12 o'clock midnight. Steam atomizer used a large portion of the time; internal administration of tincture ferri, bichloride of mercury and strychnia. Nose thoroughly syringed every hour with solution of potassium chlorate. She

did well for twenty-four hours, but then began to fail. On second day after operation obstruction to respiration appeared again, membrane evidently getting below tube. Patient very restless. Tube removed, whereupon breathing was easier for a time. The amelioration did not last long, however, and tube had to be reinserted. Pulse became very rapid and fluttering. Camphor, ammonia and nitro-glycerine injected, but with only temporary benefit. The entire system seemed to be saturated with the diphtheritic virus. About 12 o'clock midnight, forty-eight hours after operation, she had a convulsion, during which she died.

It will be seen from the above record of the seven cases, three terminated in recovery, or 43 per cent. Records of large numbers of cases usually show from 25 to 35 per cent. of recoveries, which is probably greater than we can usually expect in private practice. As a matter of practical importance, provided the case be not in immediate danger of asphyxiation, the operation should be proceeded with deliberately. Tracheotomy must frequently be done under very unfavorable circumstances as regards light and sufficient assistance, and free hæmorrhage is an annoying complication; therefore care should be taken to avoid every vessel possible. The trachea should be plainly exposed, and all bleeding stopped before incising it. From my experience thus far, it would seem advisable to remove the tube at the earliest possible moment, even before much air can be drawn through the mouth. It can be easily reinserted if necessary, and irritation and ulceration of the trachea are thereby avoided. As with many other operations, an early performance holds much better promise than a late one.

When a loud stridor is heard both on expiration and inspiration, and when the accessory muscles of respiration are brought into play, if the condition do not improve very shortly, and the complexion indicate imperfect oxygenation of the blood, an operation should be done at once. Delay is dangerous. These little sufferers tire very quickly under so tremendous a strain, and if it be kept up too long, tracheotomy will offer little hope. Done early, before the vital powers are exhausted, it will frequently add two or three days' time, during which the disease may be gotten under control, and an almost inevitably fatal issue may be turned into a brilliant recovery.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Scientific Meeting, February 16, 1892.

J. C. LANGE, M.D., PRESIDENT, IN THE CHAIR.

(*Dr. R. Williams paper concluded from page 430.*)

Illustrative of this, I am furnished the history of Mrs. ——, delivered at Homewood, in the summer of 1891, who passed through a normal labor until the ninth day, when her physician was sent for, and found her pale, weak and bloodless. A syringe and hot water removed two quarts of clots. Phlebitis complicated the case, but the patient recovered.

Patients constitutionally predisposed to flooding are perhaps the most interesting of the class mentioned, and well merit the appellation of "bleeders." They follow the inclination of predisposition, in spite of every exertion the physician puts forth, to a certain extent, and at times only mechanical pressure will relieve.

There are few sights more dreadful to look upon than the worst cases of post-partum hæmorrhage. A reign of terror ushers it into view, and that one who is at his post, equal to the occasion, and to the emergencies that arise, has within him the elements of a hero. The pulse is a mere thread, or perhaps is imperceptible; syncope manifests itself, and with it is born a hope of thrombosis in the venous sinuses; and yet there may be fatal syncope. Intense weariness and faintness comes on, and the patient, wildly tossing her arms, is with difficulty restrained. Respiration becomes gasping and sighing, suffocation seems impending, and the patient calls for more air. The skin is deadly cold, the face pale, and covered with profuse perspiration. If the hæmorrhage is not controlled, loss of vision, jactitation, convulsions and death speedily follow.

The treatment of post-partum hæmorrhage, principally, should consist in using preventive measures. If the uterus is firmly held in contraction until the secundines are extruded, and the fundus held in the grasp of the hand until the first half-hour is passed; if only, when assured that permanent contraction has manifested itself, the binder is firmly applied, and if a full dose of ergot is immediately given, cases of post-partum hæmorrhage would be much less frequent. If the history of the patient is one of post-partum hæmorrhage, then a greater care should be taken. It will be well to administer subcutaneously, a half-hour before the supposed termination of labor, a full dose of ergotine. If then the os is dilatable, and one has prepared for the emergencies that *might* arise, rupture the membranes, and take advantage of every means to insure regular and, if possible, permanent contraction. If the pulse does not fall slightly below, or comes to the normal in twenty minutes after labor is completed, this in itself is indicative of impending hæmorrhage, and then prompt treatment of tendencies, especially referable to relaxation, demands the intra-uterine administration of remedies to control hæmorrhage. Ice, with uneven edges removed by immersion in hot water, carried to the fundus, and held until contraction is induced, or ice-water—if the surrounding parts are protected—by injection, or water of the temperature of 120° to 130°, by the same means, and persisted in until contractions are invoked. Absolutely hot water favors coagulation in the uterine sinuses, and in those nervously disposed, is a form of treatment suited. It is supposed that subcutaneous injection of ergotine has been used, or that ergot in the form of fld. ext. has been given in sufficient quantities. Antiseptic wool carried to the bleeding surfaces is to be used, and in the selection of remedies, there is the choice of dilute acetic acid, chloroform, or the mineral astringents. If a powder-blower is at hand, and the parts admit, the use of pulverized nutgalls will serve a goodly purpose, and is a safe means of arresting hæmorrhage. The application of tr. iodine is also efficacious, and can be readily applied on wool. Strength of the patient must be maintained, compensation for the loss of blood looked after, and to this end, injections of drachm doses of ether play a part, with the inhalation of nitrite of amyl, or the injection of stimulants. Alcoholic-saline intravenous injection gives back tension, and supplies, in part, the fearful waste. These failing, the abdominal aorta can be compressed, or the uterus held firmly by the hand sufficiently long to aid in the formation of coagulæ.

Discussion.

Dr. Davis: The doctor has not only opened the discussion, but he has so very thoroughly covered the ground that it leaves little room for any one to add anything, but rather repeat in the way of emphasis some of the statements he has made. There is one cause of post-partum hæmorrhage that I did not notice being mentioned, that is, the use of anæsthetics in labor. I believe it is the experience of all that the use of chloroform, or any other anæsthetic, in labor, is very liable to leave the patient in such a condition that the normal stimulus of the last throes of labor is removed,

and a lassitude follows the removal of pain, so it is a question as to how to resort to anæsthetics. It is necessary to be very careful in following all the details the reader has mentioned, in regard to the pressing down of the uterus and holding it pressed, and keeping it in observation all the time until the patient has rallied, and I think where this precaution is not observed, there are many cases of hæmorrhage as the result; not always fatal hæmorrhage, but a hæmorrhage that would be avoided if these precautions were observed. The doctor has clearly outlined the magnitude and gravity of the diseased condition—because, in a great majority of cases, it is a diseased condition, a pathological condition, not a physiological one; and I know of nothing we are called on to attend, that so alarms physicians and attendants as this. I recall the words of old Dr. Meigs, when he so wonderfully demonstrated the condition. He would show us in so vivid a manner the accident; he would then mention the remedies to use, and he said after you have used these, you will throw up your hands and wish to the Lord old Meigs was there. I tell you, it has come to us all over and over again, when these patients seem, in spite of all remedies, to resist every effort to bring that uterus down; we do wish for help from any source or from every source. I would like to emphasize the hot water. It is one of the more recent ones, and it is one I have had experience with myself. In hæmorrhage, where I have felt safe, I have introduced ice rapidly, large quantities and satisfactorily, but not so satisfactorily, it seems to me, not so promptly and fully, as in the use of hot water. Most houses now, at least all well-to-do houses, have syringes of some kind, and if this water has been thoroughly boiled and cooled sufficient for the purpose, it is disinfected by that means, and I think can be used safely in large quantities, and its action in causing contraction is very prompt, and even where that is not so prompt, it does constringe the vessels, and at least the hæmorrhage is controlled.

Dr. Thomas: There was one place in the paper where the gentleman spoke of rupturing the membranes. Teachers of obstetrics advise not to rupture the membranes, but I hold and have always advocated such practice. I think after labor begins, the sooner the membranes are ruptured the better, and in a large practice of obstetrics, as a rule, I have followed it. To produce artificial labor the membranes are ruptured, so I hold that after the full period of uterine gestation has arrived, the membranes are in the road. There is one other point the reader spoke of, and that is to give large doses of ergot. Now I think that is a mistake. If you give large doses, you produce an exaggerated contraction, and if you have that, you necessarily have following an exaggerated relaxation, so that in giving it to control hæmorrhage, it is better to give small doses and give them oftener. If there is anything that raises large beads of sweat on a man's forehead, it is when he attends a case of confinement, and after the delivery or before the delivery, he hears the blood rushing out. There is nothing in the entire practice of medicine that impresses a man more than that condition. Now you talk about ice, you talk about syringes and hot water. If a man finds himself with such a case, how in the name of common sense is he going to run and get ice, inquire of the parties if a syringe is at hand, and if not, rush to the drug store and get one? The way the hæmorrhage flows out, if you wait your patient will be dead before you have these things prepared. Sometimes you can almost tell that a woman is going to have a hæmorrhage; I have done that more than once. Where I suspect there is danger of hæmorrhage, I take precautions beforehand to have a pint or two of vinegar. I do not tell this in the hearing of the patient, but I tell them I want a pint of vinegar and a clean kerchief or a small towel, and if I have hæmorrhage of that kind, I roll the towel around my hand, saturate it with vinegar, pass it up the uterus, and I have never failed to constringe the vessels and check the hæmorrhage.

Dr. Blume: The subject of post-partum hæmorrhage is certainly of importance to every physician. The doctor has fully given the different causes, as well as the treatment of this complication. I wish in the first place to call your attention to one point—to the question, Is it possible to prevent post-partum hæmorrhage? My answer is, the proper management of the third stage of labor will render these accidents extremely rare. Unfortunately, there is still a diversion of opinion as to what is the proper treatment in the third stage of labor. Some writers say the uterus must be grasped and firmly compressed as soon as the head emerges; some insist upon compressing the fundus as soon as the child is delivered. Some say it must be done about fifteen minutes after the delivery of the child; still others leave the separation of the placenta and its expulsion through the contraction-ring to the powers of nature. If you do this, you do not need to be afraid of post-partum hæmorrhage; there will be very little blood lost under these circumstances in a very great majority of cases. It would lead me too far to demonstrate to you that this last view is the correct one. The observer will find that there is very little loss of blood, in some cases almost nothing; he will also find that the uterus remains more contracted if this plan has been followed.

As Dr. Thomas said, ergot, especially large doses of ergot, has the effect of over-stimulating. About three or four years ago I published a paper on this subject, and especially about the third stage of labor. I have not had one case of post-partum hæmorrhage within the last eight or nine years, since I have been following this plan of the third stage of labor. I say of post-partum hæmorrhage, and I exclude all those hæmorrhages which arise from lacerations. As regards the treatment, I again agree with Dr. Thomas, that it is often impossible to use cold or hot water. You have not the time to do it. If it is some mild form of hæmorrhage, compression of the fundus will arrest it; if it is a serious hæmorrhage, you lose too much time before you have it ready. If I had it to do, I would simply introduce my hand into the uterus, take the other hand and grasp the fundus and make a compression of the uterus. I think very few cases will resist this treatment. The best result has been obtained in various cases by tamponning the uterus and vagina with iodoform gauze.

Dr. Batten: I venture to say that if any of us had a case of post-partum hæmorrhage to-night, we would not likely do anything that has been recommended, because we have not the appliances nor have we the time to wait. I believe that the husbanding of the second stage of labor to prevent post-partum hæmorrhage, is as important, if not more important than the third stage of labor. In my career I have had but two cases of post-partum hæmorrhage. One was not a very bad case. The other was a very bad case, and the woman finally died. I was not there at the time the child was born, nor for an hour afterwards, and when I arrived at the patient's side I found her *in articulo mortis*. I had attended her in three previous births. In another case of post-partum hæmorrhage, a case I saw with another physician, we governed the bleeding by each alternately holding or pressing the womb well down in the pelvis and giving ergot. The moment either of us would take the hand off the uterus it would become flabby. I am a great advocate of the rapid delivery of the afterbirth when the second stage of labor is complete. It is very important that the clots and all the membranes that might remain in the uterus be removed, and that the womb should be well contracted before putting on the bandage. I would object to giving ergot in any shape, either by injection or by the mouth before the child is born, because I think it would lead to difficulties afterwards that might otherwise be avoided.

Dr. Kœnig: I want to say a word in favor of that much-abused remedy, ergot. According to my understanding, the difference between ergot and the natural contraction is that the contraction by ergot is continuous. If you get the uterus contracted by large doses of ergot it does not relax. I myself have seen very few cases of serious post-partum hæmorrhage. I am sure, however, that if I had ergot at hand, I would give at least half an ounce of the fluid extract as soon as the manual manipulations should have succeeded in bringing about contractions, and time could be spared to administer the medicine.

Dr. MacFarlane: There is just one thing I wish to speak of—the matter of ergot. It was thought it should be given in all cases, and I think there are those who rely upon ergot to the exclusion of other things. I agree with Dr. Brume that the proper way of treating a post-partum hæmorrhage is to induce contraction of the uterus by the introduction of one hand into the uterus and placing the other one upon the fundus. I think the presence of the hand in the womb is sufficient. There is one thing I wish to commend to those who have not done much such work, that the doctor has made mention of in this paper, that is, the significance of a quick, rapid pulse. Though quick and rapid you may not have a post-partum hæmorrhage in the true sense of the word, but you are going to have a uterus that will relax again and fill with clots and give you trouble; and there are those who give ergot under these circumstances, and especially beginners will give the patient a dose of ergot. The proper thing to do is to empty the uterus with a few fingers, and usually the contraction will be sufficient to check such hæmorrhages without any ergot at all. Mention has been

made of the binder, and I know people who put it on with as much regularity as they say their prayers at night. I think with the average woman, by the time you raise her up and have that binder put underneath her, you will do more harm than good. Even in hæmorrhages of any kind, it is not a custom with me to put on the binder. Once you have the uterus contracted, and you remain by your patient a length of time to assure you it is permanent, I do not think there is any occasion for the binder. Dr. Thomas has stated here that the proper thing to do under any and all circumstances, if full term has arrived, is to rupture the membranes. I wish to take exceptions to it. A labor can be carried through to such time as it will rupture of its own accord, with much more comfort, and it is certainly easier on the mother's part to have a soft bag than a resisting bag.

Dr. Murdoch: No man should introduce his hand into the uterus, unless for some such grave accident as this post-partum hæmorrhage, and only then when the post-partum hæmorrhage threatens to be fatal. I mention this because the matter was vividly brought to my mind last night by a young practitioner, who told me that two weeks ago he attended a case in which there was post-partum hæmorrhage, and for the purpose of arresting it he called for a syringe, and he injected it with hot water and arrested the hæmorrhage; but in a few days the woman was taken with fever and died within a short time, of septic poison. Now, if this goes abroad that in cases of post-partum hæmorrhage, the practitioner is at liberty to take a cloth or towel and wrap it in his hand and saturate it with vinegar and push it into the uterine cavity, practitioners who have not had as much experience as Dr. Thomas has, get to think that is the proper course to pursue. Some of them may think that the loss of a few ounces of blood after delivery justifies them in the use of some such means to arrest the hæmorrhage, and they may for a trivial trouble introduce that into the system of a woman which may cause her death. It is a serious matter to introduce the hand into the uterus, and in injecting hot water in a hurry, nine times out of ten you will not get water that is boiled, but that which is filled with septic matter; and you may for the purpose of arresting a hæmorrhage that will not prove fatal, inject it in the system and probably cause the woman's death. I believe that, generally speaking, the hæmorrhage can be arrested without such means, but there are occasions where it is probably justifiable, and I have myself resorted to it. I am a believer in hastening the third state of labor; I believe in doing it according to the method of Crede. I also agree with Dr. Macfarlane that the binder is an obsolete means of producing pressure, and is not worthless, but worse than worthless—it is a nuisance.

Dr. Duff: I cannot help allowing the words of Prof. Hersh to ring in my ears. "Where a second case of post-partum hæmorrhage follows a man, he is certainly ignorant or guilty of negligence." When I say this I do not for a moment entertain the belief that cases of post-partum hæmorrhage are not a necessity in almost, if not every man's practice; not inevitable, but they should not be frequent, if proper precautions are taken. There have been remarks here tonight suggesting the impossibility of having proper instruments at hand. One certainly has a right to speak disparagingly of a physician who goes on his round day after day and night after night, waiting on the mothers of our land, without having himself provided with those instruments and remedies which may become necessary in the course of his practice, without time to run around and hunt them up, and hence while a physician does make a very great display when he has a table in the room and places his instruments upon it, which I would condemn to a certain extent, he is certainly practicing obstetrics according to the line of his duty, in being prepared for emergencies. Coming to the subject of post-partum hæmorrhage directly, the doctor did not illustrate the difference between the different characters of post-partum hæmorrhage, and in the discussion almost all have spoken of post-partum hæmorrhage which comes from the detachment of the placenta. Hæmorrhages from laceration are of different character, and it is very important that we recognize this difference. I know of a woman who died not five miles away from here, because her physicians did not recognize the fact that the hæmorrhage they were endeavoring to control did not come from the uterus, but from laceration. They kept the uterus pressed down, kept it contracted and applied lemon juice and hot water, but the hæmorrhage went on and the woman died; whereas if they had recognized the true condition and taken hold of that uterus and sewed the rent, they could have saved her in all probability. Now, with regard to the treatment, the doctor did not distinguish between contraction and retraction, as an element in post-partum hæmorrhage. We have contraction and retraction, and if you have plenty of contraction and not any retraction, you will still have hæmorrhage from the uterus. With regard to the use of ergot, it will produce contraction, but it does not produce retraction, either of the muscles or the blood vessels, and when the contraction passes off, not having retraction, you are a little more likely to have hæmorrhage than if you had not given ergot.

There are some methods of treatment of post-partum hæmorrhage that have not been mentioned. The condition of the patient must be taken into consideration, as has been stated by some one, outside of the condition of the uterus. If hæmorrhage came on, I would take the forceps and pull the uterus down, and with a pair of forceps I would take gauze and push it up into the uterus, and the hæmorrhage in ninety-nine cases out of one hundred would cease. I would never hasten to turn the uterus inside out as do Koch and others. Another thing to be done is to make pressure. I believe Beringer and Foster advocate pressure upon the abdominal aorta, one through the uterus and the other the abdominal walls, and forcing all the blood that remains in the woman's body up to the brain as much as possible. The subject is a very interesting one to me, and I feel of all the operations we undertake there is none in which we must be braver, bolder and more determined and more active.

Dr. Williams: I do not intend to take much of your time. In regard to the criticism of Dr. Thomas, I did not state any dose of ergot; all I suggested was the injection of ergotine, when we anticipated in a few minutes to half an hour labor would be over to get the effect of ergot. In regard to the use of ergot, I am a firm believer in its value, that it will produce contraction. Some criticisms have been made on the binder. I mentioned that after you were assured that you had permanent and constant contraction, the application of the binder would more firmly hold the uterus to its place, not to immediately apply the bandage.

Dr. R. H. Daly, of Pittsburg, read a paper entitled

LEPROSY.

Dr. Daly said with the permission of the Society, he would make some remarks upon the subject of Leprosy. He had last March, through the courtesy of the experienced and efficient Harbor Physician, employed by the Marine Hospital Service of the United States, at Havana, Cuba, Dr. Burgess, been enabled to examine nearly one hundred cases in the hospital for lepers, in Havana, and while he was more particularly interested in the phases and effects of the disease upon the structures, and functions, of the naso-pharynx and larynx, and other air passages, and also in the study of the fresh and recent cases, yet a general study of the disease made itself felt as one of unusual interest to him, since he with the great mass of busy practitioners of medicine, had before that time only a vague idea of the clinical features of the disease, and had never in the whole course of his professional life examined carefully a case of leprosy. He would venture to say that probably 90 per cent. of the medical practitioners of the United States could neither describe the disease in many of its protean forms or diagnosticate a recent case if they saw it for the first time; hence, the desire on his part for an opportunity for object lessons, the most potent of all lessons.

The time had come when the National or State Legislators ought to take some adequate action to prevent the ingress of lepers to the United States, and also to forcibly isolate those already within our borders. It is therefore the duty of the profession to instruct the Legislators, and the public, upon this question. And it is a matter of congratulation to Pennsylvanians that their State Board of Health had recently sent to the profession circulars making inquiries for the purpose of legislation, and it is to this end that he would give some views and observations briefly. But the profession could do little or nothing without the public, who are indebted to the unselfish recommendations of the medical profession for their light and life in matters of public health, by the recommendations of the latter for the stamp-

ing out of preventable diseases; hence, the public ought to be informed as to the needs of the hour, and urged to act through their representatives.

An eminent dermatologist, and valued friend, Dr. L. Duncan Bulkley, of New York, had recently expressed doubts, before the New York Academy of Medicine, as to the contagiousness of leprosy, and Dr. Daly read the published paper with some apprehension as to the effect of the expressions of so distinguished an authority upon the profession, and there were some statements made by the doctor that ought to receive further discussion.

Dr. Bulkley said that English observers were positive that not a case of communication of the disease had ever taken place there (in England). This, upon reflection, can scarcely be taken as an argument of any weight against the contagion, as great care has always been taken to isolate leprosy in the countries comprising Great Britain, and to that persistent isolation must in a great measure be attributed, not only the stamping out of the disease, but the prevention of contagion. Some light may be thrown upon the ancient habit of isolation by quoting an historical authority, which says:

[1] "The 'Mickle ail,' or great disease, the leprosy, which the learned call tubercular elephantiasis, prevailed in nearly every district of Europe from the tenth to the sixteenth century.

"Scotland suffered from this hideous scourge as well as other countries. It was brought, as some historians write, from the East by those who returned from the crusades. But this cannot be, for there were leper hospitals in England before the crusades began. The disease lingered in the northern islands of Scotland long after it had disappeared from all other parts of Britain.

"The lepers appear to have been sent to the island of Papa."

The parish of Walls had lepers to support in Papa as late as the year 1740, as the books of the kirk-session show. In 1742 Walls held a day of public thanksgiving for the supposed final deliverance of the country from the leprosy. But there is little doubt that cases of true leprosy were to be found in Shetland up to the close of the last century.

When leprosy seized its victim, the eye-brows and nostrils became swollen, and the countenance dusky and glossy, with a fixed look and an expression of terror. Livid pustules broke out on the face and body; the hair fell off; the voice grew hoarse and hollow. As the hideous disease advanced, ulcerating tubercles discharged a foul matter, dark scabs formed, and the face looked like a piece of rotten cork. A sense of weight and weakness oppressed the limbs. The fingers and toes mortified and fell off joint by joint. Corruption by a frightful anticipation, began its work without waiting for the grave.

The large number of victims were no doubt found among the lower classes of society, the bondmen, the poorer tenantry, and the humble dwellers in the towns. But neither age, nor rank, nor sex was spared. The disease must have been very common in old Scotland, for every town was obliged by law to possess its leper hospital. Every hospital was bound by Papal "bull" to be provided with its own churchyard, chapel, and ecclesiastics. Saint Anne was the patron saint of the lepers, and a chapel dedicated to her was frequently connected with the hospital. The leper hotels were not intended as places for the medical treatment of the disease, but merely for the separation of the diseased from the sound, lazarettos where the infected performed a life-long quarantine. They were for the most part founded and endowed as religious establishments, and were generally under the rule of some neighboring abbey or monastery. The inmates, doleful creatures, were expected to offer up daily prayers for the souls of the founder and his family. An order of Knighthood—the Knights of Saint Lazarus—was instituted about the time of David I, for the care of lepers. Knights of this order are said to have been common in Scotland and France. What kind or extent of power these knights were allowed to exercise over the lepers and leper houses, is not known. Every person seized with leprosy within the walls of a town was removed at once to the hospital. If he had nothing of his own a collection of twenty shillings was made for his behoof. He who sheltered or concealed a leper even for a single night was heavily fined.

Some of the Scottish leper houses had large properties attached to them, and must have supported their inmates in all the comforts of which the unfortunates were capable. Others were but slenderly provided, and their miserable inhabitants were obliged to depend upon charity. The act of Parliament "anent leper folk," passed in the reign of James I, ordained that "no leper folk sit to beg, neither in kirk nor kirkyard, nor other place within the burghs, but at their own hospital, and at the gate of the town and other places outside the burghs." They were allowed to enter towns for the purchase of necessaries only on Mondays, Wednesdays, and Fridays, from ten till two o'clock, on condition that they wore a cloth on their faces, and rang a hand-bell or "clapper" to give warning of their presence.

The leper hospital at Greenside, Edinburgh, was founded in the year of King James' marriage to Anne of Denmark. The money for the building was given by John Robertson, merchant in Edinburgh, and others, in fulfillment of some vow. At the opening of the hospital five leper inhabitants were consigned to it. Two of the wives of these lepers voluntarily shut themselves up in the hospital with their husbands.

The rules of this hospital were probably more severe than those of other leper houses. The inmates were forbidden to go beyond the gate by day or night, work-day or holiday, on pain of death. At the gable of the hospital stood a gallows in perpetual readiness for hanging any leper who might venture forth. The rules of the house enjoined, "That the said persons and each one of them live quietly, and give no slander by banning, swearing, fighting, scolding, filthy speaking, or vicious living or any other way, under the pains to be enjoined by the (town) council. That there be appointed an ordinary reader to read the prayers every Sabbath to the said lepers, and a commodious place appointed to the said reader to that effect."

By this time, it would appear that the disease was on the wane, for in little more than sixty years after the opening of Greenside leper-house, the magistrates ordered its roof to be taken off, and the wood and slates to be used for repairing the town mills and other public buildings. The stones of the edifice itself, and of its garden wall, were applied to similar purposes.

A leper was held to be a man dead in law. He was incapable of inheriting, and lost all his civil privileges.

On the day that he was put into the hospital, the burial service was performed over him. A priest in surplice and stole went to the lepers, and began the dismissal ceremony by exhorting him to suffer with patient and penitent spirit the incurable plague with which God had stricken him. He was then sprinkled with holy water, and conducted to the church, the usual funeral verses being chanted on the way. Arrived in the church, the ordinary dress of the leper was taken off. He was then wrapped in a funeral pall, and placed corpse-wise before the altar on two tressles, while the mass for the dead was sung over him. After this he was again sprinkled with holy water, and led to the hospital. A

[1] Rev. Jas. Mackenzie's History of Scotland, Published by Nelson & Sons, 1890.

clapper and "cop," or bell and dish, a stick, a cowl, and a leper's dress were given him. Before leaving him the priest solemnly interdicted him from appearing in public without his leper's garb—from entering inns, mills, churches and bake-houses—from touching children or giving them anything which he had touched—from washing his hands or anything that pertained to him in the common fountains or streams—from touching in the market the goods which he wished to buy with anything but his stick—from eating or drinking with any others except lepers—from walking in narrow paths—from answering those who spoke to him in the roads or streets, except in a whisper, that they might not be annoyed with his pestilent breath and his infectious smell. Last of all, the priest closed the ceremony by casting a shovelful of earth on the leper's body.

By the foregoing it will be seen with what care lepers have always been isolated in Great Britian, and to what causes the presence of the disease and contagion is so rare.

Now, touching upon the case of the death of Father Damien from leprosy, while engaged among the lepers. Dr. Bulkley quotes the doubts of Dr. Rigg, of Trinidad, concerning the contagiousness, while he also expresses his own, yet he says in the course of his paper, Father Damien "may have imbibed the leprosy germ in water, food or air," but he thought the probable source of the infection was through mosquito bites.

For all practical and hygienic purposes it is quite needless to differentiate between contagion and infection. Sufficient for either question if admitted, is segregation, and all other quarantine measures to stamp out the disease.

The *New York Medical Record* says editorially in its issue of Jan. 23, 1892, "There are not many lepers in New York, but there are too many." It is needless to say that from Pittsburgh alone, there are at least fifty persons who visit Havana, Cuba, during every winter, and from Pennsylvania there are probably 200. The laws concerning isolation of lepers in Havana are disgustingly and perilously lax. Many years ago there was a wealthy leper who died in Havana, and who endowed a hospital for these unfortunates. As a part of that hospital there is a spacious shrine, or church, where inmate lepers and outside citizens meet Sunday after Sunday to worship. True, the lepers are not generally allowed outside the iron grating of the porch, but they sit inside in crowds, and traffic in the closest possible proximity, and talk at will with their friends and loungers on the spacious steps, through the iron bars. Little children in crowds play about them on the steps, and witness the public swimming of the horses in the surf in front of the leper hospital, and, during several of my visits, a game of base ball was going on in front, and the usual crowd swarmed as lookers-on upon the hospital steps.

The public are admitted to worship in the lepers' church without restraint. At my visits the lepers gathered around me closely, and many offered freely to exchange their small and filthy paper money for silver, all willing to submit to any professional examination in their earnest desire to get relief. It is needless to say that the infected paper money finds its way into the pockets of the general public, and becomes a fertile source of contagion and infection.

Doctor Daly had been interested in the case of Joseph Miller, one of the survivors of the massacre of the crew of the filibustering ship, Virginius, in 1872, who was a leper inmate of the hospital. His name has been corrupted into Amelio by the Cubans. At the time of his rescue, he was a hale and hearty dark mulatto, but thirteen years of leprosy had turned him white; it has also made him handless, footless, sightless, noseless; it has left him without ears; it has left him without what would be recognized as a human voice; it has left him a hideous, ghastly creature, without hope in life; a mere thing, whom to look at is to make the stoutest heart shudder; whom to touch is to take the greatest possible risk of a contagion that is sure to destroy. And such destruction. No other cruel thing known is so cruel, a weary journey of years, with weary limbs over which there is no power; shunned as no other being is shunned, cast out as unclean, to await the day when the horrible, hideous mass of decay will cease to live.

Whatever be the pathology of leprosy, there can be no doubt but what it is a disease affecting nutrition, and which does its deadly work by absorption or ulcerative absorption of the tissues. For example, in the early cases, there will be seen on close inspection, a slight tumefaction of the skin and cellular tissue at a point on the ear, or nose, or limb. Later on there will be a gradually encroaching constriction at or near the point, and a slow absorption or amputation of the member or part. In some other early cases there is a strange alteration in the countenance and plaques of skin on the face and body, altered and bleached, or rendered livid by defective nutrition, or local inflammation.

The uninitiated might suspect syphilis, but when once seen and studied in its manifold forms it can scarcely be mistaken. The limits of time and the subject announced, as the order of this meeting, prevented Dr. Daly from going further into this subject at present.

(*To be continued.*)

The Medical Society of the Missouri Valley.

Tri-Session of the Fourth Year held at Leavenworth, Kansas, March 17-18, 1892.

FIRST DAY—EVENING SESSION.

(*Continued from page 427.*)

Dr. O. B. Campbell, of St. Joseph, Mo., read a paper entitled

MODERN THERAPEUTICS.

In this age of rapid progress, when every conception of the human mind must mature with electrical rapidity, when discoveries of to-day are known in every part of the world to-morrow, is it any wonder that therapeutics should undergo such wonderful advancement? Modern therapeutics, however, are advancing, it seems to me, rather out of proportion with the other branches of medical science. New remedies, as discovered by chemists, are finding a too prominent place among the therapeutic agents of the average physician, to the exclusion of the older, time-tried remedies. I do not advocate simple empiricism alone, yet to my mind empiricism must be given its proper place; remedies must be well tried upon the human organism, in order to ascertain their physiological effect. Without this there can be no true advancement. It would seem that our manufacturing chemists are not only racking their brains in a search for new remedies, but, after their discovery, the physiological action is as soon known by them, and the class of diseases for which they are used are as quickly enumerated, tabulated, and samples of the remedy sent free to every physician in the land. I do not wish to condemn altogether the manufacturing chemist, as I am aware that, in the last few years, many new remedies have been discovered, which have proven valuable acquisitions to therapeutics. Yet I wish to call the attention of the profession to what I believe to be a dangerous, unscientific course that is being pursued by them, and if viewed in its proper light, it places the profession in very nearly the same position as the laity in general hold to the advertised patent medicine. The plan pursued by the manufacturing chemist is, no doubt, familiar to all of you. When a remedy is discovered, or a new compound originated, then it is christened, its properties briefly stated upon the wrapper, the many diseases it is successful

as a remedy in, are enumerated, and then, to make it palatable for the profession, its formula is given; this acts as a kind of sugar-coating, and the profession, on the strength of knowing the formula, can intelligently prescribe it.

About two months ago, a bright-looking young gentleman called upon me at my office, and in a self-assured, business-like manner, he informed me that he was a representative of the Melier Drug Co., of St. Louis; that he wished to present to me a physician's sample of Ponca Compound. Said he: "You will find this to be a great uterine tonic and sedative, and it is being used extensively by physicians everywhere." He said he hoped I would give it a trial. I accepted the proffered sample box. Upon the top of the box was printed in large letters, "Physician's Sample Ponca Compound." Uterine alteratives especially affecting the mucous surfaces. I turned the box over; upon the bottom it read: Ponca Compound, for metritis, endometritis, subinvolution, menorrhagia, leucorrhœa, dysmenorrhœa, ovarian neuralgia and inflammation. Checks threatened abortion and miscarriages, restores suppressed menses from cold, removes painful symptoms of pregnancy, relieves after-pains and favors involution. Upon one side of the box it gave the following formula. Each tablet contains:

Ext. ponca, gr. iij.
Ext. mitchella ripens, gr. j.
Canbaphylin, gr. $\frac{1}{4}$.
Helain, gr. $\frac{1}{8}$.
Viburnum, gr. $\frac{1}{8}$.

I read and reread the formula. Singly, the therapeutic agents enumerated were devoid of any particular physiological action. As a compound, I wondered whether it was due to the proportions, that it possessed such a wonderful physiological action; or was it due to some chemical change? I was at a loss to know how a remedy could control after-pains, and yet favor involution. I would briefly enumerate a few more of the innumerable compounds that are sent out for physicians to use: Elixir Vigorans, as prepared by the Vigorans Chemical Co., of New York and St. Louis. The formula contains the hypophosphites of calcium, potassium, sodium, iron magnesium, quinia and nux vomica, erythroxylon and, as stated, various adjuvants. Viburnum Compound—the formula of Dr. Hayden. A venerable-looking gentleman called upon me a few days ago, and presented me with a sample bottle Viburnum Compound, as prepared by the New York Pharmaceutical Co., of Massachusetts. Upon one side of the wrapper this astounding information appeared: "As a reliable uterine tonic, antispasmodic and special remedy for dysmenorrhœa, menorrhagia and female debility, it is without an equal in the materia medica for giving immediate and satisfactory results. No special caution required in its administration." Upon the other side it read: "Employed successfully in bilious colic, spasms, hysteria, cramps, diarrhœa, cholera morbus, cholera infantum, cholera, and all internal pains of the stomach and bowels. For valuable formula, properties and uses, doses and the testimonials of twelve hundred well-known physicians, see hand book." I suppose it is hardly necessary for me to call your attention to the absurdity of such vaunted claims. It does seem to me, that such pretentious, imaginative, absurd claims as regards these preparations, or I may say, any therapeutic agents, can only be based upon a profound ignorance of pathology, or it is an intentional fraudulent claim for financial gain. The criticisms that I would make of the profession are, first, that they will quietly submit to such unscientific methods on the part of the manufacturing chemists; second, that so many will make use in practice of any preparation that is brought out; and last, but not least, the giving of testimonials. It seems to me, that a certain class of physicians are anxious for self-aggrandizement, that they love to see their names appear in print. The evil arising from this method of quackery, which is growing every day, is to greatly bar the true progress of therapeutics, and to wonderfully increase mortality. Imagine a physician depending upon Ponca Compound as a remedial agent in puerperal metritis, to the exclusion of remedies whose physiological action is known. Further, has any physician ever ascertained the physiological action of the compound? Is it enough for the Melier Drug Co. to have printed upon the bottom of the box the diseases the compound is good for? Must we follow their dictates, like sheep? The methods pursued by the manufacturing chemists and the support they receive from physicians are, as I firmly believe, as unscientific as the methods of the ordinary quack medicine vendor. The manufacturing chemist has improved upon our fluid extracts and tinctures, and has improved upon the manufacture of pills, so that they are more soluble. He has discovered new remedies, thus far and no farther can his labors legitimately extend. It is time for the profession to call a halt, and discontinue this encroachment upon professionalism. If manufacturing chemists will persist in endeavoring to educate the profession, in the application of therapeutic agents, and no halt is called, the effect will be dangerous; it is a simple acknowledgment upon our part that they are capable of doing so. If this be true, then there can be no science in the practice of medicine. Imagine a materia medica treating of the physiological action of these innumerable proprietary compounds, and the class of diseases in which they may be used. Medical journals are largely responsible for this wholesale quackery; entire pages being devoted to the advertising of compounds and proprietary new remedies! All that is necessary for a manufacturing chemist to do, in order to bring his compound before the profession, is to largely advertise in medical journals, send samples to physicians, and its success is assured. Can we, as scientific physicians, prescribe proprietary compounds, without any knowledge of their physiological action? The majority of testimonials that are given by physicians are from a set of medical quidnuncs, whose ability to ascertain a true physiological action must be questioned, and who are more interested in advertising their individual selves than the remedy.

The first scientific principle in medicine is a diagnosis. This requires on the part of the physician, a knowledge of the anatomy of the human body, particularly of the part affected, and then the methods necessary to arrive at a proper conclusion; after this we must understand the pathological condition, the state of the organ, or part affected, and the process by which the organ or part is rendered in such a state. Then a knowledge of physiology that, through the different systems, we may apply a remedy to reach the condition. After a theoretical knowledge of this kind is obtained, then still in order to be able to prescribe a remedy, or put in use our knowledge, we must have practical experience. Now then, surely manufacturing chemists cannot lay claim to this knowledge, and yet, without this, they will dictate to the profession, and originate compounds for us to use. Since the discovery of antipyrine, innumerable coal-tar preparations have been placed upon the market by the manufacturing chemist; at the present time it seems that every manufacturing house is trying to invent a new one of these preparations, the composition of which is known only to themselves. The full physiological action of the coal-tar derivatives is not known; however, this much is known, that they are, the most of them, heart paralyzers, they depress the vaso-motor center, lower blood pressure, and further diminish the ozonizing power of the blood. This is the probable action of the coal-tar preparations as regards their antipyretic powers. Physicians are making use of

these preparations regardless of the condition of the heart, and in continued fevers where the heart often needs stimulation. The therapeutical agents of the average physician to-day are the coal-tar preparations, and very many proprietary compounds, while the time-tried remedies are but little used. I do not condemn new remedies, but I would advocate a thorough study of the physiological action before they are made to replace known remedies.

It may be that my criticisms upon the course that modern therapeutics is taking, and the part played by the manufacturing chemist are untimely, and will not meet the approval of the profession. But surely if we wish to uphold the dignity of our profession we must discountenance the methods of the manufacturing chemist, the use of proprietary medicines, and the giving of testimonials by physicians.

Adjourned.

SECOND DAY—MORNING SESSION.

The Society was called to order at 10 A.M. The first paper was by M. F. Weyman, M.D., St. Joseph, Mo., entitled

FUNGUS CHALAZICUS, A NEW MICRO-PARASITE.

It is natural for physicians to consider a tumor developing in the passage of a secreting gland a simple retention cyst. When, however, careful examination by means of the microscope has shown the fallacy of such an assumption, mere inference no longer has a right to judge. Still, even in science, the general acceptation of well-proven facts is often an exceedingly slow affair.

The little tumor known by the name of chalazion, and developing in the Meibomian glands of the eyelids, is a fair illustration of this statement. Although Virchow showed, many years ago, that it is a cysto-plastoma, it still figures in many of our modern text-books as an ordinary cyst. Virchow's nomenclature with reference to this little neoplasm is undoubtedly well chosen, but the term granuloma, at first proposed by Dr. Thomas, of Tours, seems preferable to me.

The name is a full description of the pathological anatomy in one word. The microscope reveals a fibrous capsule, which is probably derived from the membrana propria of the gland. No secretion is found in its cavity, but in its stead we meet countless numbers of lymphoid cells. The latter are embedded in a fibrillated matrix apparently derived from coagulated plasmatic material. In fact, in the central portions fibrillation is often absent or only slightly marked.

From the various parts of the capsule spring strong fibrous bands subdividing the main cavity into numerous irregular spaces. The resemblance suggests *grosso modo* the structure of a lymphatic gland, but the absence of the small final trabeculæ does not carry out the comparison. The vascularization is not very abundant, but considering the avascular structure of cartilage we need not wonder at that.

The appearances outlined above class the tumor at once as a granuloma.

Thin sections over stained in carmine and then decolorized by acids afford beautiful pictures, and make the subject plain at a mere glance. It might be well to mention that small tumors furnish the best material. They give a view of the totality of the tumor, are more readily hardened, and present a center less brittle and, therefore, less liable to drop out. The fact that some chalazia present gelatinous or fatty contents is no objection, for we all know how easily granulation tissue (especially the *caro luxurians*) undergoes degenerative metamorphoses.

Strange to say, the discovery of the true pathological anatomy caused considerable embarrassment as to the etiology. We all know that unhealthy granulations imply continual irritation for long periods. Many, among them De Wecker, thought that the retained secretion might cause irritation, but in the very suggestion you can read the doubt in the author's mind. In the first place, no secretion is found in the tumor and, furthermore, secretion-plugs do not cause granulation tissue elsewhere. This is well illustrated in the case of atheromatous tumors, so frequently observed on the scalp. As another possible source, De Wecker mentions blepharitis marginalus, by which granulations might be formed at the mouths of the excretory ducts of the Meibomian glands. From this location they might readily extend upward into the glandular follicles proper. This sounds reasonable, but when we consider that many persons are troubled with chalazia without ever having had blepharitis, this view also is unsatisfactory.

With these considerations I went to work in the study of this neoplasm. The result was the discovery of a fungus, which at once explains the whole subject.

The first thing I noticed were numerous spores which appeared in the sections. They were situated in the capsule and the tissue adjoining it. Toward the center they became fewer in number. Many were seen floating free in the field. Also mycelial branches seemed to penetrate through the capsule. Knowing that spores readily develop in straining fluids and that thin fibrous tissue might simulate the appearance of hyphæ, I began a systematic search for the mycelium. After many disappointing trials I succeeded in locating small fragments; they looked like very long and thick bacilli and could be made out only with dazzling lamp light. Focussing showed that these little rods were not only on the surface of the section, but they would come to view successively through its whole thickness. The transmitted light assumed a bluish or greenish tinge, just as in the case of bacilli. In my mind everything was proven, but I felt the difficulty of convincing others, unless I could show a larger part of the mycelium in its entirety. Moreover, the methods followed out so far did not admit of easy confirmation. I therefore looked about for an easy and decisive *modus demonstrandi*.

I used a solution of caustic potash (one part of the hydrate to two of water), and put a section in a few drops of this reagent. A cover glass was put on next, and the whole thing warmed for a few seconds over the lamp. After this the preparation was watched under the microscope, at a small inclination of the body. A little blotting paper took up the flowing reagent.

The sections readily dissolved and disappeared before my eyes, leaving the fungus behind. Gentle washing removed the detritus, while a slightly acidulated current cleansed away the last tissue fragments, and also the hydrate of potash. A little magenta readily stains the fungus, the tincture could not make plainer a thing already so plain.

The washing could be done gently, or else the current might wash away fungus, tissue, and all. The mycelium should not be displaced at all, for, whenever it moves on, it takes a kind of rolling movement, and in this manner all its filaments form a thick cord-like mass, in which details cannot be demonstrated without continual change of focus. The best view can be obtained during the action of the alkali, for here the relation of the parasite to the tissue is thoroughly exposed. Often hypha after hypha shows up below and within the tissue, as the latter is dissolved by the caustic.

The sporangia are represented by irregular terminal masses on the filaments, showing numerous spores embedded in its substance; the filaments are of two kinds, the thin and the thick, with the latter greatly predominating. Of some fifty sections taken from three different tumors, every one showed the parasite without fail. From this, I think, the chain of evidence is fully established. Actual cultivation had to be excluded on account of lack of material.

Conclusions.

1. Chalazia are not retention cysts, but true granulomata.
2. Their appearance in large numbers and in successive periods suggest a parasite etiology.
3. Their ready reproduction after removal, also points in that direction.
4. The growth of granulation tissue pre-supposes a long-continued irritation of a low grade.
5. A fungus can be demonstrated in chalazia.
6. The "fungus chalazicus" fully explains the etiology of the neoplasm, giving the *causa originis* of the local irritation and of the granuloma resulting therefrom.
7. Hordeola often preceding chalazia, and also having many characters pointing to their parasitic origin, might possibly be caused by the same fungus.
8. The *typical* chalazion must be considered a neoplasm, due to parasitic causes; still, the possibility of a mere retention-cyst cannot be denied, however rare such an occurrence might be.

(*To be Continued.*)

Chicago Medico-Legal Society.

March 5, 1892.

The secretary read a paper by Dr. Richard Dewey entitled:

SOME ILLUSTRATIONS OF THE WORKING OF THE PLEA OF INSANITY IN CRIMINAL PROSECUTIONS.—A PLEA FOR BETTER REGULATION OF EXPERT TESTIMONY.

The plea of insanity, as a defense in criminal prosecutions, has from time to time been the subject of much discussion, and is still worthy of attention for the reason that a state of affairs exists which confessedly needs a remedy. In the limits of this paper it is proposed to speak only of cases where the insanity plea has been used in a manner calculated to arouse suspicion as to the propriety or honesty of its use. That there have been large numbers of cases in which persons committing crimes have been allowed wholly to escape from any penalty by urging the plea of insanity is well known. Such of these cases as are the result of sympathy on the part of the jury, with a wronged husband or with a person committing a crime under highly extenuating circumstances, may be omitted from present consideration, and only those cases where all would agree that the ends of justice have been defeated, need now occupy our attention; furthermore, the especial end now sought is the illustration of the manner in which justice is defeated by the methods of legal procedure in relation to introduction of so-called expert testimony, which is misleading to court and jury.

It is believed that the present evils will exist so long as the present method of obtaining testimony continues, namely, that of permitting each side in any given case to procure as witnesses whomsoever they list and, in effect, offer a reward for unscientific and untrue evidence, on the part of those who are willing to make merchandise of their knowledge and reputation. There are also circumstances connected with the present system of calling expert testimony which tend to warp the judgment and opinion of experts whose intentions are honest, as matters of theory and opinion differ so greatly from matters of fact. The insanity of an individual, in a given criminal proceeding, is a matter of opinion as distinguished from ordinary matters of fact which are capable of demonstration to the ordinary mind, and the value of an opinion to a jury depends upon the individual giving it, and also oftentimes on the circumstances under which it is given. There could be no stronger condemnation of the present system of admitting expert testimony to courts than that, which is recorded of the utterances of eminent judges, in all parts of our land,[1] and it would appear that an urgent need exists of doing away with a feature of criminal proceedings, which is admitted by all to be scandalous, by some method which would procure expert testimony, before the court and jury, from sources above suspicion.

The manner, in which this object may be accomplished, is one for lawyers and legislators to discuss, but the essential object to be attained should be the summoning by the court itself and not by any party to any litigation, of persons capable of giving expert advice and assistance without reference to its bearing upon any personal interest, which should be authoritative and open to no doubt, either of dishonesty or incompetency.

When closing this paper, I will endeavor to speak somewhat more in detail, but will now endeavor to present facts, in reference to cases which have come to my knowledge, as medical superintendent of a State insane hospital, illustrating the evasion of the law by the plea of insanity, under circumstances of greater or less suspicion, as to its genuineness and propriety.

The following cases will serve to illustrate and amplify my meaning:

1. Case No. 4,247.—Male, admitted October 17 1890, age 28. The history of this patient was briefly as follows: he had committed frequent infractions of the law and was under indictment for burglary and house-breaking at his own home. Also for robbing the United States mail in Woodford county, Illinois, and for breaking into a ticket office in Indiana. He was subsequently heard of in Bloomington, Illinois, where he was arrested for burglary, having broken into a gun shop and carried off a quantity of goods which were secured while in his possession. Being arrested and lodged in jail in Bloomington, when his case came up for trial his father, a reputed millionaire, came to his rescue with large numbers of witnesses, from his own home, who testified to many acts of such folly as to have the appearance of insanity. Medical men also, took the stand and asserted that from their examination of the patient they were satisfied as to his insanity, one of them presenting a rather elaborate written statement as to examination of the eyes and the muscular control and with the "æsthesiometer" and announcing the conclusion that the patient was a victim of "paresis." Other physicians took the stand and testified that the facts, being as represented by the witnesses, and in view of all the testimony, they were also of the opinion that the prisoner was insane. The jury brought in a verdict of insanity and the prisoner was sent to the State Hospital at Kankakee. He was there under careful observation during three months and did not present any evidence of insanity. An examination with reference to the condition of the eye, abnormalities of muscular control and the test of the "æsthesiometer" corresponding to the examination, reported by the physician testifying that he was affected with "paresis," failed to verify any of the symptoms mentioned in his statement. The patient himself did not hesitate to say that he had adopted the method, before described, in order to "get him out of the scrape," and that his father had paid for the testimony which was given. Having been a sufficient length of time in the hospital, to admit of such study of his case as was necessary, and to afford certainty that there was no nocturnal epilepsy or tendency to paroxysms, with lucid intervals, the patient was discharged as not insane.

He was shortly after arrested in St. Paul, by a United States officer, to be brought to Chicago for trial, under indictment for robbing the United States mails, but escaped from the deputy, who had him in custody, by breaking a window and jumping from the cars, in the outskirts of Chicago. He next made his appearance at his home and was there placed under arrest and brought to trial under the indictments for burglary and robbery. His father took an active part in having him brought to trial at his home, seeming to prefer that the case of the United States against him, should not come up, and a large amount of evidence of experts and

[1] As an example see "Wharton & Stille's Medical Jurisprudence" p. 239. "And Judge Davis, of the Supreme Court of Maine, went so far as to say, 'If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my judgment, that of medical experts.'"

laymen was again furnished to the effect that the prisoner was insane, the ablest counsel being employed in the defense. Being myself subpœnaed, by the prosecution, I was present at his trial and testified that he was not insane, in my opinion, as did two or three alienists besides of wide experience. The jury, after hearing the eloquent plea of the defense, brought in a verdict that the prisoner was insane and he was again sent to a State insane hospital, this time the Central Hospital at Jacksonville. He had not been there many weeks before he succeeded in effecting his escape and in a short time was heard of in St. Louis, where he was arrested, for the theft of an overcoat, in a hotel. His present whereabouts are unknown.

II. Case No. 3,111.—Male, aged 24, admitted March 5, 1889. This patient being in jail, awaiting his trial for stealing and driving away a drove of hogs, passed into what appeared to be an attack of melancholia. He refused to take food, was silent and stupid and indifferent to his personal wants. He remained persistently in this condition for so long a time that it was thought best to have an inquest to determine the question of his sanity. The jury brought in a verdict of insanity, and he was committed to the hospital at Kankakee. The assistant physician who first examined him, having understood from the officer who brought him that he seemed unable to speak, and had not spoken for a long while, when going to examine him addressed to him suddenly, and in a way calculated to surprise him, a peremptory question. He was surprised into replying quite intelligibly, but relapsed again into silence which, however, did not last long. His manner changed noticeably from day to day, and the attendants, without knowing the circumstances, expressed suspicions of him. He was notified that it was unavailing for him to similate longer and in a few days gave up all attempts to do so. He was returned as not insane in one month, the authorities being notified and taking charge of him when released from the hospital. He was brought to trial and sentenced to the penitentiary, and again on April 17, 1889, brought back to the hospital at Kankakee, from the prison, being certified as insane by the prison physician. After remaining under observation for a time again he was discharged as not insane and returned to the penitentiary, since which time nothing has been heard from him.

III. Case No. 4,572.—Male, age 25. Admitted June 26, 1891. This patient was under indictment for forgery, and was a victim of alcoholic excesses. He belonged to an exceedingly neurotic family and there were several relatives on both the father's and mother's side who had been insane. No evidence was obtained at the hospital going to show that the patient had been insane at any time, except his rather desperate conduct resulting from the combined effects of alcohol and "bad luck." He was under very considerable strain and nervous agitation and consequent physical exhaustion. He had also contracted what his family regarded as a matrimonial misalliance, and regarded himself as much persecuted by them on that account. At the time of his admission to the hospital, he perhaps properly came under the head of what the law describes as a "distracted person." His abnormal symptoms, however, were traceable wholly to his vices. The patient's family were persons of wealth and prominence, and procured able advice and set up the plea of insanity. I am not acquainted with the evidence adduced further than indicated by a statement which the patient made to me regarding the testimony of one of his witnesses, who was also a personal friend. This friend stated to the patient, so he informed me, that he had testified to various queer acts, largely of his own invention, for the purpose of assisting him to escape the consequences of his acts. This patient was discharged after a couple of months in greatly improved mental and physical condition, and such mental disease as existed was simply the result of his depraved acts. He at once relapsed into his vicious and intemperate courses on being discharged from the institution.

IV. A similar case to the above was that of No. 3112. Male, age 22 (circa). Admitted March 6, 1889. This patient being employed in the office of a large manufacturing establishment, found an opportunity on pay day to make away with about $3,000, and conceived the original idea of getting himself and the money packed in a trunk, carried to the railway station at Chicago and checked for St. Louis. The trunk was placed in such a position in the baggage car that the patient was left standing on his head, and a few hours of consequent misery were sufficient to make him call for deliverance. He created consternation by sounds, which, to the baggageman, resembled "Hark, from the tombs," but was finally discovered and "unpacked." Being arrested and returned to Chicago he set up the plea of insanity when brought to trial. Wealthy relatives came to his assistance with able counsel and expert testimony. The jury, after hearing the evidence of experts and the arguments of counsel, found a verdict of acquittal on the ground of insanity, and he was sent to Kankakee. Like the foregoing patient, he was morally hardly an average individual, and his arrest and confinement and anxiety had produced a condition of profound mental disturbance and physical depression, but such mental trouble as existed was traceable to his depraved conduct and its consequences, and did not exist at the time of the commitment of his offence. This patient also boasted of the able manner in which he had been helped out of his "difficulties" by his friends.

V. Another case coming in the same category was No. 3,133, male, age 25, admitted April 5, 1889; a young man with wealthy and influential friends. This patient had once, before coming to the hospital, suddenly disappeared from Chicago and subsequently been found in New Orleans, and claimed that he never knew how he got there, although he shortly before his discharge admitted to me that he had made preparations for the journey, and carried a traveling bag with such things as he would need for the trip. At the time of his admission to the hospital he was under indictment for stealing a horse, but was not brought to trial, being found insane and committed on an ordinary verdict of insanity. He was in a condition of profound despondency and nervous prostration at the time of his admission, and subject to intense paroxysms of nervous headache. On two occasions while at the hospital, when allowed out upon the grounds, he disappeared. Once he was brought back from Cincinnati. At another time he went away only a few miles, and returned voluntarily the next morning. He claimed each time that he did not know what he was doing. His physical health improved very much, the patient was rational, well-behaved and industrious. After his case had been for some months under observation, and after careful consideration of all the facts, I became satisfied he was feigning, and he was discharged as "not insane." His disappearances, I subsequently learned, were timed so as to come just prior to the term of court at which his case would be called.

VI. Case No. 4,563.—Male, aged 26, committed June 15, 1891. This case was a parallel in many respects to No. 3,111. The patient being in jail awaiting his trial for forgery, feigned insanity and was sent to the hospital, where, after careful study and observation for a month, he was found "not insane," and returned to the county from which he came. Subsequently, when brought to trial, he set up the plea of insanity, but was found guilty and sent to the penitentiary. This patient and No. 3,111 were also alike in possessing but little influence or money with which to contest their case, and engage lawyers and experts to elaborate the defense on the ground of insanity.

VII. The next case, No. 3,856, male, age about 40, admitted February 15, 1890, is one in which the prisoner was indicted in Cook County for murder and found by a jury trying the case to have committed the act as charged, but to have been insane at the time such act was committed. Concerning the circumstances of this case I know only this: that the patient, while alleged to be intoxicated, shot and killed a man on or near his own premises; that he was a relative of an influential alderman; that the officer who brought him to the hospital expressed it as the prevailing opinion of those knowing all about the case, that the man had been saved by pleading insanity from the legitimate consequences of his act, and that he never showed any sign of insanity after his admission to the hospital. The sole evidence of any mental disturbance was that the patient himself stated that his "memory was poor." He was discharged as "not insane" after being under observation about two months, and presenting no symptoms of insanity.

VIII. Case No. 4,531.—Male, aged 30, admitted May 9, 1891. Sent to the penitentiary for burglary. This patient was found insane in the penitentiary, and transferred to the insane hospital. He had an attack of melancholia, which would seem to have been caused by the depressing circumstances of his confinement in prison. He recovered, and when his father came to visit the patient he, the father, stated that he had the assistance of an influential politician in Chicago to procure a light sentence for him, but that his case had gone too far to admit of his getting entirely clear on the plea of insanity, but he intimated that if he had understood in time how to work the case, he would not have been sent to the penitentiary.

IX. Case No. 4,566.—Male. Age 21. Admitted June 22, 1891. This was a patient of less than average intelligence, belonging to the order of "toughs." He was indicted for

burglary and escaped the consequences of his acts by the plea of insanity. He was discharged as not insane after protracted observation in the hospital, and his father in coming to return home with him stated that his son had come to the hospital as the "easiest way out of a scrape," adding that he was a good boy but had "gotten into trouble through bad company."

X. Number 3,900.—Male. Age 40. Admitted Dec. 20, 1889. This man claimed his entire innocence of horse-stealing, the crime for which he was under indictment, and represented that his wife had purposely schemed to get him into the penitentiary in order that she might be rid of him; obtain what property she could, belonging to him, and be free to secure another husband. His troubles had produced in him an attack of melancholia, but there was no evidence of previously existing insanity. By the aid of able counsel, however, he was sent to the insane hospital instead of to the penitentiary. He made a good recovery after a few months treatment.

XI. Number 3,808.—Female. Admitted Nov. 20, 1889. Discharged as "not insane" Dec. 23, 1889. This patient was tried for infanticide. Her child was illegitimate and when it was but six days old she got out of bed, went and bought laudanum which she gave to the child and then started for a neighboring town, where the child died. She related the above herself and said her only idea was to hide her disgrace. She never showed any signs of insanity while in the hospital.

Illustrations of the questionable use made of the plea of insanity might be still further increased, but the above will perhaps suffice, and in closing I may be allowed perhaps to offer some suggestions as to means for avoiding such miscarriage of justice.

In the first place it would seem to be important that the question of insanity, when raised in a criminal case, should be taken up, fully considered and settled as a preliminary to any further proceedings and not made an incidental element in the trial of the case, confusing the two issues which should be distinctly separated, first, of the prisoner's mental condition, and second, of the commission of the alleged crime.

In an able medico-legal article on "The Legal Relations of Epilepties"[1] the eminent writer, Dr. M. G. Echeverria, makes the following demand. "Let a preliminary examination of the prisoner be entrusted to competent medical experts to fully ascertain and accurately to estimate the question of insanity before he be placed on trial, and this system once sanctioned by our legislature and put into practice, the prevalent misconception of insanity, and its abuse in contravention of public safety, will be effectually checked, and no occasion left to accuse the law."

In the second place, such modification of procedure should be made as to relieve expert testimony of all apparent partisan bias, by empowering the court, for its own satisfaction and that of the jury, to call in the assistance of persons possessing authority and reputation to render an opinion based upon a thorough examination of all the facts with the sole view of furnishing additional light for the guidance of the court and jury. In France and in Germany this practice prevails and men of thorough scientific attainments are called upon to present reports upon the question of insanity and other questions requiring expert knowledge and experience, and in this way the exhibition of diametrically opposed expert opinions supplied at so much "per opinion" is avoided.

In a paper upon the subject of expert testimony[2] appearing in 1873, Dr. John Ordronaux, the then State Commissioner in Lunacy, of New York, thus expresses himself:

"Whenever, therefore, that majestic system of jurisprudence, which has been a convenient treasure-house for even the common law of England to draw from, has been adopted, no contradictions and no ambiguities in the application of expert testimony before courts are known. Under its practice the expert was considered simply as an *amicus curiæ* whose opinion was *ex vi termini* a *quasi*-judgment in the premises."

In Wharton and Stille's Medical Jurisprudence, in the chapter on the evidence,[3] the following statements are made:

"Hence when the trial comes on, the expert who is selected because he holds views which the great body of his profession reject, testifies often alone, or with but slight and inadequate correction. From this have arisen those outrages on public justice which eminent medical authorities have been among the first to deplore. Hence it is that high medical authority has called for the abandonment of the present system of 'voluntary' experts, and the establishment of a government board, as is the case in Germany."

Also in the same connection[4]: "In many parts of Germany the practice obtains of requiring the medical faculty of each judicial district to appoint a special committee to whom questions of this character are referred. This committee is examined directly by the court, and gives testimony somewhat in the same way, and with the same effect as would a common law court when reporting its judgment in a feigned issue from chancery, or as would assessors called upon the canon law to state, in proceedings under the law, what is the secular law of the land on the pending question."

In France the court often calls in men whose opinions are authoritative to prepare and report upon insanity and allied questions, and governs the conduct of the case by information thus obtained. The managers of the New York State Lunatic Asylum in one of their annual reports express themselves as follows:[5]

"It may not be amiss to observe that this matter of the testimony of experts, especially in cases of alleged insanity, has gone to such an extravagance that it has really become of late years a profitable profession to be an expert witness, at the command of any party and ready for any party, for a sufficient and often exorbitant fee; thus destroying the real value of the testimony of unbiased experts. Vaunted and venal expertness is usually worthless for evidence; and yet such testimony is getting to be in great demand. One expert, whether real or assumptive, is set up against another; and finally it will result that, by competition, pretending inexpertness will prevail, by numbers, against the real expertness of those few thoroughly qualified men whose judgment is the mature experience collected from years of daily study and practical observation. Obviously it does not become States or great tribunals, or public justice, that the testimony which settles matters of weight should be trifled with as it is for an emolument; and experts should only be called, as formerly they were, by the court itself, on its own judgment of the necessity requiring them; and when called at all, they should be sworn advisers of the *court and jury*, and not witnesses summoned in the particular behalf of any party; nor should they be permitted to receive either fee or reward from any party, but only from the court or the public. Capable judges are competent to say in any case whether the court requires the evidence of experts for its information in matters of technical knowledge or science, and also to say who shall be particularly summoned for his acknowledged expertness; and should, therefore, have the control of that sort of testimony, which is only allowable to enlighten the court and jury, and not to be the ordinary captious weapon of attorneys and counselors, nor to be the theoretic, one-sided opinions of sciolists, founded on some hypothetical case which deflects more or less from the actual truth of the real case in question."

[1] American Journal of Insanity. Vol. 29, p. 556.
[2] Aermican Journal of Insanity. Vol. xxx., p. 316.
[3] p. 243.
[4] p. 242.
[5] Quoted by Ordronaux, "American Journal of Insanity. Vol. xxx, p. 313. et seq.

Ordronaux further states, in the article already quoted,[6] page 317: "Courts of equity are in the habit of sending issues of fact to be tried before masters in chancery, and their reports are always accepted as preliminary judgments upon the issue tried before them, requiring only the subsequent confirmation of the court to give them plenary authority. A similar rule obtains in many European countries in relation to issues involving the necessity of expert opinions."

If the foregoing citation of cases and opinions shall serve in some measure to direct thought and attention to the fact that failures of justice result from imperfect medico-legal relations in the matter of determining the question of insanity in criminal prosecutions, they will have fulfilled their object.

Medicine stands ready to do her worthiest for furthering the ends of justice, but is dependent upon law for her opportunity.

One step in advance has already been made in Illinois, and in two or three other States of our Union, by establishing a separate asylum for insane criminals, and placing there such criminals as are really insane, but this is of no avail when the plea of insanity is fraudulent. There is nothing that the superintendent of an insane hospital can do when convinced that any patient, criminal or otherwise, is not insane, save to open the door and say "depart in peace." It is assuredly not well that justice should be burlesqued or made merchandise of by permitting flagrant malefactors to pose as irresponsible madmen in our courts, and afterwards boast of their cleverness in cheating courts and juries—neither, on the other hand, is it well that really insane persons should be found guilty and punished for crimes of which they are morally guiltless, because of incompetent or unenlightened presentation of their cases, or of ignorant popular clamor.

Both of these failures of justice would be remedied, to a great extent, by a better system of regulating expert testimony, and especially by legally defining and restricting the function of experts in such a manner that the expert shall be *amicus curiæ*, an assistant to the court, and not, as sometimes happens, a suborned and hired accomplice in the prisoner's guilt.

BOOK REVIEWS.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-third Annual Session. Baltimore. 1891.

The reviewer of so excellent a volume as the present one is at a disadvantage, when his space is limited. A full page would be none too large to give our readers even a condensed account of the meritorious papers in this book of nearly 400 pages. The Presidential Address by Dr. T. A. Ashby deals with medical legislation for the repression of quackery, and shows the necessity of a greater degree of unity and organization on the part of the profession in Maryland, in order to prevent the gradual breaking down of the barriers against incompetence and greed. The President wisely urges the profession throughout that State to come together at the various county seats to form as strong local organizations as possible, in order that the voice of the profession may not go unheeded in the future as it has gone in the recent past. The annual address was given by Dr. W. H. Welch, who is also President-elect; its subject was the causation of diphtheria, and has already been referred to at length in these columns. This address was, in effect, an arrangement of the latest details of information regarding the bacillus diphtheriæ, and the dissipation of some erroneous views formerly held and taught concerning the disease. Dr. Joseph T. Smith presented a supplementary paper on the treatment of the disease, in which the utility of alcohol is maintained in certain stages of the attack. Dr. Randolph Winslow had a surgical contribution on injuries to the kidney, based on a case which resulted in recovery, after a protracted convalescence. Dr. J. D. Blake's paper deals with the operation of perineal section for the relief of various urethral lesions. He has found the use of electricity an aid in the passage of instruments in tight stricture. Dr. Michael's paper on obstetrical antisepsis, and Dr. Gardner's on milk fever, are intelligent and modernized presentations of their respective arguments; we hope to return to one or both of these papers in a future issue of The Journal. Dr. H. Newell Martin has two physiological articles, one on the recent discoveries by Dr. Hodge, of Clark University, concerning the ganglion cell. His second paper, on the nerves of the heart, recounts some studies made by him and Mr. Lingle, at the laboratory of the Johns Hopkins University, which show a wonderfully beautiful preservative function, believed to apply to the inception of suffocation. When dyspnœa begins the arteries of the heart are seen to dilate, while the systemic vessels constrict, and this, Nature's conservative step, is so taken in order that the last remaining oxygen shall go to the vital and fundamental organ. Dr. Hiram Woods has a plea for the greater care of the eyes of infants, under the title of "Blindness in the United States." He quotes a practical suggestion from the usages of the Eye and Ear Infirmary of Sheffield, England, which consists in the giving out of a card to the poor, warning those who have care of young children as follows: "If a baby's eyes run with matter and look red a few days after birth, take it at once to a doctor. Delay is dangerous, and one or both eyes may be destroyed if not treated immediately." Dr. Cathell has a paper on the effects of tonsillar hypertrophy. Dr. Humrichouse writes on diphtheria and intubation. Dr. Rohé reports in continuation of his earlier series in 1890, a second series of one hundred cases of labor at the Maryland Maternité, with notes regarding the occurrence of rare positions, of puerperal convulsions and of ophthalmia neonatorum. Dr. John C. Hemmeter has two papers of interest; one on the effects of alcohol and other drugs on the velocity of the blood current, as measured by the stromuhr of Ludwig; and a second on the treatment of acute miliary tuberculosis with tuberculin. The results in one case were so favorable that some late consultants are led to offer the suggestion that the disease was not miliary tuberculosis, but typhoid fever engrafted upon a chronic tuberculous consolidation of the lung; this recital must have been an intensely interesting one. Dr. Samuel J. Foot writes on the training of the feeble-minded; Dr. J. J. Chisholm on the eye diseases of the unborn, and there are one or two others of less striking character. Taken as a whole, the Maryland fraternity have no reason to be other than proud of this year's work. It is worthy of a better and more attractive binding and "dress," as the printers say.

Stricture of the Rectum. A Study of One Hundred and Thirty-eight Cases. Second edition, by Chas. B. Kelsey, M.D. Professor of Diseases of the Rectum at the New York Post-Graduate School, etc., etc. pp. 48, paper.

This is a valuable pamphlet and fully sustains the reputation of the author as an authority on this interesting subject.

Dr. H. H. Knapp, Superintendent of the Kansas State Insane Asylum at Osawatomie, has tendered his resignation—to take effect July 1st. He has held the position nineteen years.

[6] American Journal of Insanity, Vol. xxx, p. 317.

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189

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SATURDAY, APRIL 9, 1892.

SEVERE EFFECTS OF DIPTERIC PARASITISM AT ST. LOUIS.

From *Insect Life* we occasionally derive information as to human parasites belonging to entomology. A recent article relates the case of a lady of St. Louis who suffered from the hominivorous habits of the screw-worm. The attack was first noticed by the patient in consequence of a nasal irritation with sneezing paroxysms of so great violence and constancy that a physician was called in. A diagnosis and treatment for influenza met with failure. The patient grew worse on the second and third days, having an increasing distress, intense pain between the eyes, with face, nares, eyes and pharynx greatly swollen. On the fourth day, two or three white worms were extruded from the nose by sneezing, which led to a local examination and a new diagnosis. A large number of white larvæ was seen attached to the nasal mucous membrane so far as its swollen condition permitted of its being viewed. By instrumental means about thirty larvæ were extracted. Chloroform spraying and solutions of carbolic acid failed of making the parasites loosen their hold. Indeed every effort to dislodge them, caused them to retract and bury themselves more deeply in the tumefied and bleeding tissues.

During the next three days instrumental means were continued by the physicians and over two hundred larvæ were removed and put in alcohol. Some of them were taken from the posterior surface of the tonsils and nares, by the help of indirect illumination and curved forceps. On the eighth day no more larvæ could be found and relief began to be experienced; the inflammatory conditions subsided and the structures infested by the larvæ gradually recovered tone and normal function without any permanent injury to any part.

But meanwhile, during the acute period of her suffering, the patient developed a suicidal mania. She implored her attendants to allow her to end her life, and even argued with her physician upon the advantages to herself and family if her life could be ended. This suicidal tendency has been observed before in patients suffering from screw-worm infection; and all such patients require to be constantly watched during the acute period of the attack.

The larvæ were nearly all fully grown and would probably have come away spontaneously in another day. The method and time of lodgment of the ova were not ascertained beyond an indistinct recollection on the part of the patient—of some moderate nasal disturbance after sleeping near an open window; there was no history of catarrh or ozæna known in the case. Cases of this kind of parasitic trouble have been not uncommon at the St. Louis City Hospital. In the summer of 1888, there were five or six cases; four in 1889; three in 1890; and one or more in 1891. The assistant superintendent of the hospital is quoted as saying that "one of the cases in 1890, died from the exhaustion of the attack, and one died from another disease while affected with the worm. Others recovered, but with greater or less mutilation. Several cases, especially those of 1888, came from Texas, but some were generated in this (St. Louis) vicinity." Not a few of these cases were in persons who were known to have slept in the open air, probably receiving the infecting oviposite while exposed. These cases generally occur in the more southerly localities, but some have been reported as far to the northward as Wisconsin. The practical teaching of the case above recited is "not to sleep out of doors in the daytime with the face uncovered." And further, the depressing mental effects of the attack, already mentioned, should not be overlooked.

With regard to treatment, instrumental removal has not always been demanded, since there are cases on record where the spray of chloroform has been efficient for the dislodgment of the screw-worm, so-called, in considerable numbers. It is by no means certain that all these parasitic invasions have the same genus of blow-fly as their originator. If this is true we can readily understand that they will not all behave alike under the same treatment; it is reasonble then to see chloroform succeed in one set of infections and fail in another series. In the St. Louis case none of the larvæ were preserved for purposes of study and identification.

THE SULPHONAL HABIT.

DR. E. H. SQUIBB, of Brooklyn, in a reprint from the *Transactions of the New York State Medical Association*, 1891, entitled "The Materia Medica, Pharmacy and Therapeutics of the year ending October 1, 1891," emphasizes the warnings of a few writers against the indiscriminate use of sulphonal. He considers that it is usually safe; and having a wide

range of usefulness, its sale has largely increased during the past year. The form of administration, in a very hot aqueous solution, as suggested by DR. STEWART, of Philadelphia, is commended as a means of securing prompt action and of avoiding the customary delay of an hour or more. DR. W. H. GILBERT, of Baden Baden, thinks he has seen undesirable results from its popular and steady use. "It is surely bad practice," writes DR. SQUIBB, "to leave the matter in the patient's hands to the extent of directing him to take a certain dose whenever he cannot sleep, as is apparently the practice of some. There are evidences now on record of the habit being formed approaching that of morphia. Fatal cases also have been reported during the past year. For such an effective and widely used hypnotic, then, the conclusion should be to use caution." DR. CARLYLE JOHNSTONE, of Glasgow, who has used sulphonal in a great variety of cases, has found that small doses of the drug are preferable to full ones. As a rule, he has not found it best to prescribe it oftener than on alternate nights, in which case, presumably, there will be less danger of habituation.

BRONCHO-PNEUMONIA FROM THE B. COLI COMMUNE.

Some five years ago SEVESTRE[1] explained the occurrence of broncho-pneumonia in cases of enteritis in infants by the assumption of an infection from the intestine. His language is a little obscure, and it is not clear whether he meant a bacterial infection or a poisoning by chemical products formed in the intestine. While both modes of infection are probably true, the first at least has received a very positive confirmation at the hands of M. LESAGE. At the request of SEVESTRE, LESAGE investigated bacteriologically five cases presenting the requisite clinical features. In four cases there were patches of broncho-pneumonia, one of which had suppurated. In the other case there was merely a pulmonary congestion. In every case the B. coli commune was found in the pneumonic patches and in the congested lung. Moreover the B. coli commune was the only microörganism found in the pneumonic patches. In some conditions of enteritis this germ appears to acquire a virulence which it does not ordinarily possess, and when, under these circumstances it escapes from the intestinal canal, and is carried to distant organs, it seems capable of producing a wide variety of pathological conditions.

The study of this microörganism is becoming more and more important, particularly with reference to infections in and about the intestines. It can hardly be doubted but that some of the obscurity now surrounding diseases of the right iliac region, and which it is the custom to-day to class in a rather comprehensive way under the title of appendicitis, will be cleared up when the natural history of this organism is more perfectly understood.

The controversy between RODET and ROUX on the one hand, and CHAUTEMASSE and WIDAL on the other, relating to the identity of this microörganism with the KOCH-EBERTH bacillus, the alleged cause of typhoid fever, can hardly fail to be of the greatest service in leading to the truth.

These observations of LESAGE indicate the possibility of other complications of enteritis in infancy being due to infection from migrated B. coli commune. A few weeks ago the pathological importance of this microörganism was reviewed in these columns, and reference made to the wide variety of lesions in connection with which it had been found.

[1] Le Bulletin Médicale, January 24, 1892.

MENTAL DISCIPLINE AMONG THE INSANE IN ASYLUMS.

The *New York Medical Journal*, March 19, refers to educational work that may be done among the inmates of our asylums. In the Utica Asylum class instruction has been used at intervals. It is now again in successful employment on a limited scale, having been revived about three years ago. Two patients, who could not read or write before becoming insane, learned to do both before being sent to their homes. One woman was a terror of the ward until ten o'clock in the morning, when she goes childlike and quiet to her class and for two hours is the most docile and interested of all the pupils. Only the fear that she may be kept away from her school makes her at all controllable at any other time. In the earlier history of the Utica Asylum, about fifty years ago, the efforts at teaching the inmates made by DR. BRIGHAM were attended with some success, and classes were started, but the experiment was not renewed under more recent management, for several years. DR. KIRKBRIDE and DR. PLINY EARLE made brief trials of education as a means of cure.

The greatest successes in that direction were won by DR. LALOR, of Dublin, at the Richmond District Asylum. He persisted in educational treatment for thirty years. His sturdy adherence to his system was followed by the happiest results. He sought to bring nearly every patient, not incapacitated, in the hospital department into one class or another of his selection as best suited to the needs of the individual.

The fountain-idea of this plan of DR. LALOR was to provide occupation for those of his wards who would otherwise be unemployed. Some were sent to school, some were trained in industrial exercises, and about one-fifth part engaged in both. Music occupied an important place in this system, common school studies were laid out for the brighter members of the flock, while object-teaching interested the less intel-

V.1
189

ligent ones. The Richmond Asylum has a different air from many others. There are there signs of activity and movement, without violence, everywhere, and there is less of that gloomy monotone that commonly overshadows asylum life. "This is a matter," says the *Journal*," that is worthy the attention of the well organized asylums of the land. One of the essential features in thus ministering to the mind diseased is the training of the will, in all disorders of personality, in all unstable conditions of the nervous system. In the prevention and cure of disease, education is our powerful ally, and one of the highest duties of the modern doctor is to indicate the kind of mental and moral training best suited to the individual needs."

SAD LESSON AS TO MENTAL OVERSTRAIN. THE "SPRING VACATION."

The *Times and Register* refers to the sad fate of an eminent medical teacher of Philadelphia: "With deepest regret we learn that the doors of the insane asylum have closed upon him! What an ending for such a life! To the very last no evidence of mental alienation appeared in his lectures or his writings. The habit of a lifetime's assiduous labor carried him along in the well-worn grooves, although outside of them his malady was easily discernible. Hard work, no rest, no Sabbath, no vacation; by such means his powerful intellect carried him to the forefront of his profession; but at last outraged Nature reached her limit of endurance, and the break-down was complete."

Not a few medical men of our acquaintance no longer bear so well the fatigue of a winter's campaign, as they did a year or two ago. The strain, more particularly in the case of city dwellers, has been rendered harder to bear by some undefined malaerial "constitution," as our forefathers used to say. Malaise and a propensity to lassitude indicate, to the minds of some observers, that many a hard-worked physician may be under the epidemic influence without being sick enough to give up to it. This kind of continuity of effort, or working under protest, has done no little injury. A nervous break-up, like that referred to in the above quotation, has not often resulted, but much causeless suffering of a psychical nature has been experienced. It is high time now for many of our city fraternity to take a run into the country. They need to invent for themselves "a spring vacation." A longer and a serener future is involved in it, for many.

BEQUESTS TO HOSPITALS.—Under the will of the late Major-General George W. Cullum, of New York City, the following hospitals receive donations: The Women's Hospital and annex, $6,000; the Cancer Hospital and chapel, $10,000.

AMERICAN MEDICAL ASSOCIATION.—NOTICE TO OFFICERS OF SECTIONS.

Officers of Sections are requested to take notice that the official program must be completed by May 15, by which date each Secretary must hand to the publication committee a list of the papers to be read in his Section, arranged in accordance with the days of meeting. Titles sent later than this date cannot be included. Secretaries of Sections will please send their lists of papers to Geo. Duffield, M.D., Chairman Committee on Publication, 25 Washington Avenue, Detroit, Mich.

AERIAL TRANSMISSION OF TYPHOID FEVER.

DR. SICARD, of Beziers, has reported to the Paris Academy of Medicine his series of original investigations regarding the spread of typhoid fever through the atmosphere. His plan was to have his typhoid patients breathe through tubes into water that had first been sterilized. Specimens of water thus treated were frequently found to yield the characteristic bacillus, under cultivation. This amount of success did not always attend DR SICARD'S experiments, and this is not at all surprising in view of the fact that the typhoid bacillus has been found to be elusive, by the best of bacteriologists, under conditions that were strongly indicative of its presence. But DR. SICARD'S results were sufficiently uniform to warrant an inference that the expired breath of typhoid patients, like that of typhus fever, may serve as the channel for fever infection. For many years the infective properties of the expired breath of ship fever has been taught by every recognized authority, but with regard to typhoid fever the teaching has not been so general and positive. But DR. SICARD'S observations, if fully confirmed, must modify our former conceptions, and it will become our duty to put upon their guard all those who attend upon the typhoid patient.

The vast majority of typhoid infections have their origin in a contaminated water supply, but every observer has been puzzled more or less by cases of the disease which have arisen apart from any known inculpation of the drinking water. These obscurely originated cases may belong to the group whose bacillar contact is atmospheric—not simply by means of the breath of the sick but also by the emanations from sewers, cesspools and other receptacles of typhoid excreta.

FRAUDS IN EUCALYPTUS OIL.—There is a lively demand in the English markets for oil of eucalyptus, and some unscrupulous retailers of the drug have been tempted to tamper with it. A chemist at Liverpool was detected in trying to sell an article contain-

ing 20 per cent. of alcohol for the crude oil, and was fined. The *Therapeutic Gazette* has an editorial on the subject of misrepresentation that is liable to deceive the unwary buyer in this country. Get the best, we say, and accept that only.

A reliable fluid extract of eucalyptus can be had in this country, but with regard to the *eucalyptol* obtainable here we are not so certain. In the article in the *Gazette*, it is stated that Professor Mosler, of Griefswald, has published his results from the use of the oil of eucalyptus in the *Berliner klinische Wochenschrift*. Mosler's paper says, "The oleum eucalypti used by me was procured from Messrs. Hoelzle and Chellius, of Frankfort-on-the-Main." A chemically pure eucalyptol is listed by an importing house at a dollar an ounce, while a good standard article may be had at half that sum.

COLLEGE COMMENCEMENTS.—The Woman's Medical School of the Northwestern University held its Commencement exercises March 28, 1892. There were nineteen graduates. The valedictory address was given by Miss Marie Louise White. Dr. Henry Wade Rogers, President of the University, conferred the degrees.

The graduating exercises of the Rush Medical College of Chicago were held March 29, 1892. The graduating class numbered 142, the largest class ever turned out by a Chicago medical school. Will V. Gage delivered the valedictory, and Prof. E. L. Holmes, M.D., the doctorate address.

On the same day the Chicago College of Physicians and Surgeons celebrated the termination of the session, by conferring its degree upon forty-two graduates. The doctorate address was given by Prof. Bayard Holmes, M.D., and the valedictory by W. B. Hazen, of the graduating class.

DOMESTIC CORRESPONDENCE.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I feel confident that I voice the sentiment of the profession when I thank Dr. Suiter for his address on "The Importance and the Necessity of National Health Service," and you for publishing it.

Let us unite at Detroit, and appeal to Congress as the voice of one man, and surely we will be heard. Respectfully,

S. E. HAMPTON, M.D.

Milton, Ky., March 28, 1892.

RIGID ENFORCEMENT OF IMMIGRATION LAWS.—Acting under orders from the Assistant Secretary of the Treasury, no more immigrants will be allowed to land simply on the assurance from some society that they will not become public charges. Any one who does not possess $10, or who does not have a railroad ticket to his destination, will be detained and sent back to the country from which he came. It is said that under this rule the number of immigrants who may be sent back often amounts to as many as 500 on the days of the week when steamers are due.—*Boston Med. and Surg. Journal.*

NECROLOGY.

Dr. David Hayes Agnew.

Dr. David Hayes Agnew, of Philadelphia, died on the 22d of last month, about twenty years after his induction into the University of Pennsylvania chair of surgery. He was a native of Pennsylvania, the son of a physician of eminence, and had reached his seventy-fourth year. After graduating from the University just named, in 1838, he for a time tried country practice, but this not meeting with his expectations, he removed to the city. He began to lecture in the Philadelphia school of anatomy, and it was not long before he brought it and himself into prominence through his lectures. As one of his fellow surgeons has remarked, "He was the school. He made it, and it made him. One of the reasons why he has always operated so successfully is that he always knows within a hair's breadth of where he is cutting. He has a wonderfully, exact anatomical knowledge and always appears to have the bearings of the different deeper organs and tissues as vividly before his eyes as if the superficial ones were made of glass." His first published lecture, known to us, bears date of 1856, and was his valedictory to his anatomical class. During the late war, Agnew and Morton alternated as consulting surgeons of the great Mower General Hospital, probably the largest in the country, with a staff of nearly fifty resident surgeons. In this position the volume of military surgery, of a critical and capital class, was almost without parallel, up to that time. In 1863 he began his connection with the University as demonstrator and lecturer on clinical surgery, and about the same time went upon the staff of the Will's Ophthalmic Hospital. He had already received an appointment to the surgical staff of the Philadelphia Hospital, and other hospital appointments followed, as well as his election to the Presidency of the College of Physicians. In 1884 he began to draw out from the arduous public work he been carrying, by resigning from the Philadelphia Hospital after a service of eighteen years. In 1888 he resigned his University professorship, and at the end of that session accepted an emeritus position. His friends, with the graduating class of 1889, commemorated his retirement by the presentation to the University of a fine portrait in oil of the beloved professor. His chief literary work is his Principles and Practice of Surgery, published by Lippincott in three large volumes, of about three thousand pages and over a thousand illustrations. This book was a monument of patient compilation and original work and was regarded by good judges as the most practical standard of surgery in the English language. A revised edition was issued in 1890. It has been translated into the Japanese tongue. His membership in the Association dates from 1872. Dr. Agnew's reputation as a surgeon was world-wide, and when the operative procedures, that were necessary in the case of the mortally wounded President Garfield were confided to him, there was a feeling throughout the country that a wise consultant had been selected. Operative surgery was the chosen field of his professional labor and admirably did he occupy it, his method being marked with rapidity, confidence and conservatism, but he was probably also one of the most highly esteemed surgical teachers of his day. One of our contemporaries says of him: "As an operator he will long be remembered for his consummate skill and heroic boldness, unmarred by rashness, and by his exquisite sensibility to the pain of his patient."

From our Philadelphia Correspondent.

DEATH OF PROFESSOR D. HAYES AGNEW, Emeritus Professor of Surgery in the University of Pennsylvania.—D. Hayes Agnew died March 22, at his home in Philadelphia. He suf-

V.18
1892

fered with an attack of influenza last year, from the effects of which he was a long time recovering, and probably did not regain his previous health, although attending to his duties up to a fortnight before his death, when he was confined to his room with bronchitis. Indeed, he continued at work up to the last, for on the day he was obliged to lay down his work never again to resume it, he performed an exhausting surgical operation, at the conclusion of which he was seized with an attack of angina and exhaustion, which seemed as if it would at once prove fatal. By advice of friends he consented to remain at home for a few days, and, as a result of their kind ministrations, he appeared to be recovering until two days before death, when uræmic symptoms appeared and he passed away at the age of 74 years, leaving a widow, but no children. The funeral services were held at the Second Presbyterian church, of which he was a member and constant attendant; the pall-bearers were Drs. Walter F. Atlee, William Hunt, W. W. Keen, D. Murray Cheston, DeForest Willard, R. A. F. Penrose, Horatio C. Wood, John Ashhurst, R. S. Curtin, W. F. Woods, Hunter Maguire, and E. L. Duer. Justices Paxon and Sterrett, Judges Thayer and Pennypacker; Messrs. George Junkin, M. Hampton Todd, Pierce Archer, Thomas W. Hall, Thomas G. Hood, James Long and Crawford Arnold. A very large concourse of personal friends crowded the church to its utmost capacity. Many more were turned away, being unable to gain admittance.

A special meeting of the College of Physicians was held to take action upon the death of Dr. Agnew, who last year was its presiding officer. Dr. S. Weir Mitchell presided, and made a brief address. He was followed by Drs. John Ashhurst, W. W. Keen and Alfred Stille, who each referred to the loss that the college had sustained, in moving terms. A minute was adopted of resolutions of respect and condolence, a copy of which was directed to be sent to the family, and the Fellows of the College decided to attend the funeral in a body. The members of the faculty of the medical department of the University of Pennsylvania also met and adopted resolutions upon the death of Dr. Agnew, setting forth among other things, "their appreciation of the nobility of his personal character and the enduring excellence of his professional achievements. As a didactic lecturer he was unsurpassed. As a clinical lecturer his enormous experience and his diagnostic and operative skill made him preëminent. That skill which amounted to genius was the foundation of his scientific greatness and often enabled him at a glance to detect conditions which had eluded the investigation of others."

Dr. Weir Mitchell, in a letter to one of our daily papers, so admirably sums up the salient points of the life history and personal character of Dr. Agnew, that it may be reproduced here as a memorial of one who both "served his generation well" and "bore without reproach the grand old name of gentleman."

To the Editor of the Public Ledger:—Sir: When a man as remarkable as Agnew dies there are a few brief days during which the lay public takes interest in the qualities of his purely professional life. Then his remembrance lives on in tender forms for those who loved him, and in technical shape, by what he wrote, survives in the gathering annals of his profession. Before, as time goes on, the natural interest of men in the details of a notable life becomes less I should like, with your leave, to say certain things of Agnew which it greatly delights me to be able to say of one of the masters of my guild. Amidst all that men have yet said of him, these have not been said—nor are they likely to be, except by physicians who know—ah, very well know—the true qualities of their rank and file, and are deceived by none of the pretences and shams which now and then win from the public a false estimate of this man or that, and set him, for a time, on dangerous levels of apparent competence. For methods which won this sort of success Agnew had a gentle contempt. He once said to me that it distressed him to be spoken of in the daily papers, and, with the nearest approach to sarcasm I ever heard from him, added: "I don't have a great esteem for newspaper doctors." He owed nothing to such means he here alluded to. His upward progress was due to the most earnest use of every energy in the doing of whatever he had to do. For him, to do a thing well was to satisfy his sense of duty as nothing else could, and moreover, work was his only play—strange paradox! He rejoiced in this use of himself. To be long away from work wearied him, so that there went to the perfecting of his every day business—duty and the pleasure which others get out of holidays. I do not say that this combination which makes true play of mind or body a thing impossible is a quite desirable result. The body which can endure it and live to age must be of sturdy make.

When he and I were in our early days—of ill-repaid work, he taught anatomy to crowded classes in a building where I had my laboratory. I then saw much of the tall, strong man, out of whose perfect anatomical knowledge began to come the quickly trusted skill of the surgeon. This is a natural way to surgical success. It came by slow degrees—and at last clinical position, and, later, the Barton Chair of Surgery. Then a vast and overflowing practice followed. There was nothing abrupt or startling in this success. It was a normal growth, and due in great measure to the esteem and confidence with which his own profession learned gradually to repose upon his surgical judgment. He was a *doctor's doctor*, and that means a great deal to us who see ourselves from the side scenes and amid the grim sincerities of the consultation. As I watched his career, it seemed to me he owed our unbounded trust not to his intellect, which was not highly originative or fitted for profound research, but to singular balance of mental and moral qualifications. Novelties neither too much tempted nor too much repelled him. He was intellectually very honest. The surgeon is sometimes apt to become dramatic, to like display of his own skill. Agnew had none of this. Neither caution before a decision, nor cool courage in surgical action, was ever wanting. The presiding mind was strong rather than subtile, and was capable of swift action in emergencies. I never knew a man who seemed to me to live his professional life on higher levels of that common sense which in its perfection is so uncommon. He seemed to me also to get out of his mental and moral machinery all that was possible in life, and how rare is this? Nature had made him ambidextrous, and the kindly grave face and the gentle pity of his ways with the sick or hurt was a pleasant thing to watch.

For behind this quiet and instinctive tenderness was a real kindliness of heart—a great good will to men, an unbroken sweetness of temper. To know what that gift or that conquest means a man must have been a physician. He had it, and, too, a calm delight in his power to help. He once said to me "that sometimes the immense amount of unpaid service to physicians and their families was hard on too busy people." But then he added, "It is, after all, a great help to oneself. We ought to be thankful we are not always making mere money." Of the exact words I cannot be sure. Of the sense I am.

I have seen many men change almost radically as life went on. Agnew was from first to last, young or old, with small means or easy competence, the same man. He held resolutely by his Christian creed and took it with him into life. A certain simplicity was in all his ways. The outcome of act from belief was fearless and unquestioning. He believed, as I do, that a clinical class of men and women is dis-

gusting. He thought it wrong, and sacrificed to his belief the coveted Surgeoncy of the Pennsylvania Hospital—resigning at once rather than obey the order of the managers. The country saw what manner of man was this when Garfield was shot. Agnew looked on the call to the President as a duty to which all other duties and all other interests must yield. It was a nation's call which he obeyed. For three summer months he spent nearly all of his time in Washington or at Elberon. His bulletins were simple. He kept the inevitable reporting cormorant at bay. The storm of impertinent criticism, lay or medical, honest or unscrupulous self-parade disturbed him not. He did his duty nd made no answers. Meanwhile his consultation room was closed, his operations ceased, his income fell to nothing. The inevitable result came, and the President died. Agnew declined to send in an account, and tranquilly accepted from Congress an honorarium such as is common enough to receive for a single large operation done in any distant city. This pitiful expression of a nation's gratitude to appearance troubled Agnew as little as any minor annoyance might have done. So long as the creditors' Conscience and Duty were paid in full he was in no wise greatly concerned. What he won in life was the just reward of fine faculties of mind, unending energy and a general loveliness of nature, which, in all his forms of useful activity, secured for him the utmost affection. There was no luck in this sturdy, unreposing life. Fortune did nothing for him.

In the noble words of one of our own home poets whom we have not yet learned to know, he might at any time have said to the fickle dame:

> "I am not poor enough for thy reward;
> Honor and splendor in my heart abide;
> I want thee not, save that thou kneel, and so
> Proffer thy service as cup-bearers do."

Fortune bent down to him, not he to her, and therefore it is that his profession so much reveres his memory—thankful less for its intellectual product than for the beautiful illustration of how noble a thing the life of a great surgeon may be. S. Weir Mitchell.

Professor Agnew left a legacy of $50,000 to the Hospital of the University of Pennsylvania, $1,000 to the College of Physicians and made a number of other public charitable institutions his beneficiaries. The total amount of his estate being estimated at $100,000.

Dr. Alfred Carpenter, of Croydon, England, was one of the notable figures at the meetings of the British Medical Association. His death at the age of 68 removes an honored standard bearer. "Somewhat in advance of his times—as reformers must of necessity be—he did much with pen and speech to educate public and professional opinion in matters pertaining to hygiene and domestic and municipal sanitation." He was instrumental in the accomplishment of much good sanitary work, in his own town, where he was a member of the Board of Health and Justice of the Peace. He was medical attendant to the Archbishops of Canterbury, and his other important public responsibilities fill a list too long to enter here. An appreciative memorial note appears in *Public Health*, March, from which we quote the closing paragraph:

"Nothing better pleased Dr. Carpenter than to hospitably entertain sanitarians or students at his private house near Croydon, and to take them over the sewage farms. Although an advocate of total abstinence, he would on these occasions place wine on the table for the use of those who differed from him in theory and practice. Latterly he was afflicted with threatened blindness, but until quite recently was fairly vigorous. Dr. Carpenter was a good speaker, a kind and sincere friend, a man of culture and refinement, and his death is a loss both on account of public and private worth."

Dr. David C. Comstock, of New York city, died March 24, 1892, from paralysis following apoplexy. He was born at Reading, Connecticut, about fifty-three years ago. His medical education was obtained at the University of Michigan and Bellevue Hospital College, New York, getting his M. D. at the latter in 1869. He was, for many years, a professor in the New York Veterinary College, secretary of its Faculty and Sanitary Inspector to the Board of Health. He was an affable and energetic practitioner, and had scholarly qualities and fitness for teaching as well.

SELECTIONS.

Russian Jews Stopped on the German Frontier.—Owing to the prevalence of typhus fever, the German Government has prohibited Russian Hebrew immigrants from crossing the frontier. In consequence, the Russian frontier towns have become very much crowded, and it is feared that typhus fever will spread through all of the border towns. Most of the immigrants who have been stopped were on their way to America.—*Boston Med. and Surg. Journal.*

The Toxicity of the Blood in Cases of Acute Suppuration.—Nissen reports a number of experiments in which the blood of persons suffering from suppuration was injected subcutaneously and into the peritoneal cavity of mice. In all cases blood from patients in the same clinic, but without suppuration, was injected as a control experiment, but in none of these cases was any effect produced upon the mouse. From the patient with suppuration, the blood was taken from a part of the body distant from the seat of the pus. In most of the cases, the mouse died within from two or three to twenty-four hours after a series of characteristic symptoms. After death, the mice showed hæmorrhagic exudations, hepatization of large portions of the lung, enlargement of the spleen, and other indications that the injected poison may have been fatal by its action upon the blood of the animal.—*Boston Med. and Surg. Journal.*

Specific Gravity of the Blood in Disease.—Dr. Hammerschlag draws the following conclusions after a number of examinations of the blood:

1. The specific gravity of the blood depends generally on its amount of hæmoglobin, and is entirely independent of the number of blood corpuscles present.

2. In chlorosis, anæmia, tuberculous diseases and malignant tumors there is always a constant relation between the amount of hæmoglobin and the specific gravity, inasmuch as a certain amount of hæmoglobin causes in different patients the same specific gravity. It is therefore possible to draw conclusions on the amount of the coloring matter in the blood, and it suffices to ascertain the specific gravity of the blood to decide the state of disease.

3. In nephritis it is found that the specific gravity of the blood is lower than the amount of hæmoglobin would indicate.

4. In circulatory disturbances the specific gravity remains generally normal, even if œdema is present.

5. In fever the specific gravity decreases, but becomes normal on defervescence.—*Centralblatt fur Klin. Medizin.*

The Diagnosis of Gastric Ulcer.—In the course of a recent discussion on ulcer of the stomach in one of the London medical societies, Dr. Routh said that electricity assisted in the diagnosis of gastric ulcers; if there were really an ulcer the pain would be intensified on passing the constant current through the painful spot, whereas if no ulcer existed the current would afford relief.—*Med. Rec.*

NEW INSTRUMENTS.

A NEW URETHROTOME.

R. INNIS BROMLEY, M.D., SONORA, CAL.

It is my purpose in presenting this article to introduce a new urethrotome, the principles of which differ from any of those now in use.

All of the urethrotomies in popular use at the present time are provided with but one blade and are intended to be used as single "cutters," the incision being made either toward the front or towards the dorsum of the penis as the inventor thought best that it should be made.

Figure 1.

The instrument which I present contains four knives, and cuts the stricture substance at four points at right angles to each other. The accompanying illustration will give the reader an idea of the instrument.

It consists of a bulb, A, which contains the knives, a slender shaft, B and the handle. The knives are set at right angles to each other and emerge from four slots near the end of the bulb. The knives are so arranged that when pressed upon they slide up inclined planes and emerge from the slots spoken of. They are attached to a slender steel rod which traverses the shaft of the instrument, thence into a piece of metal fitted into the handle which I shall designate, the "plunger." It is here secured by a millet-head screw, C. This forms the connection between the knives and the thumb piece, G. A spiral spring on the handle presses against the plunger and holds the knives in place when not in use.

The length of the blades may be regulated by revolving the disc, F, to any desired number under the index, E. The disc is divided into several numbered spaces ranging from 16 to 40, French measure.

To facilitate cleaning the instrument, I have divided the bulb into two parts: viz., the cap and the base. The division being just in front of the slots. These two parts are fitted together by means of a thread-screw.

In cleaning the instrument, project the knives, relieve the rod by making several turns on the screw, C, at the handle, unscrew the cap from the base of the bulb, withdraw the

Fig. 2.

knives and cap together and finally remove the cap from the knives. The whole manœuver takes but little time.

Altogether, the instrument is very simple. It can be operated with one hand, readily cleaned, and the length of the knives may be known when they are out of sight in the urethra.

It will be seen by the arrangement of the knives, that a stellate incision is made in the structure, thus thoroughly relaxing the tissues. By reference to Fig. 2, which is intended to represent a transverse section (diagramatic) of the stricture cut with my urethrotome, will it not seem reasonable to suppose that the small sectors of tissue denoted by a, a, a, a, are more capable of being contracted, retracted, or absorbed than the band of tissue á in Fig. 3, which is

Fig. 3.

broken at only one point by the single cutting urethrotomes?

In gynecological practice who would think of making but one incision in a constricted vagina when several would more thoroughly relax the fibrous bands? Our best gynecologists suggest and practice free incisions into the fibrous tissues. Why not observe this in dealing with strictures of the urethra? I certainly have had better results with my instruments than with the single cutters.

Moreover, a single incision into the fibrous bands of a urethral structure changes the position of the canal at that point. In Fig. 4, let the inner circle *a* represent

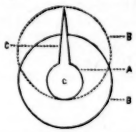

Fig. 4.

the lumen of a strictured urethra, the center of which is *c*, *b*, the normal urethral canal having the same centre. Now, after an operation with a single cutting urethrotome, an incision is made toward the dorsum of the urethra represented in the figure by *c*, does not the centre of the canal at that point become changed to *c* and after dilatation will it not occupy the position of the circle *b*? The new urethra will take the direction under these circumstances, as shown in Fig. 5, producing an abrupt turn in the urethra at the point of operation.

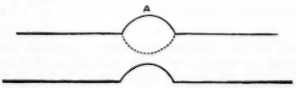

Fig. 5.

While some surgeons may think this trifling or too exacting, I have had patients complain, after being operated on by the "single cutters," of a sense of constriction and an uncomfortable feeling remaining, upon voiding urine, even after I had passed a No. 32 sound.

I believe this to be due to the abrupt turn that I have described. I have naver had a patient so complain after being operated on by my instrument. While I do not believe in simply scarifying the tissues of a stricture, I do not think it necessary to inflict so deep a wound in the tissues as some of the instruments are capable of making in the hands of some surgeons. I also think, that the same results can be obtained by making smaller incisions with my instrument than by the deep incisions of single cutting urethrotomes.

MISCELLANY.

AMERICAN ACADEMY OF MEDICINE, PRELIMINARY PROGRAM.—The following topics are promised for discussion at the 17th annual meeting of the American Academy of Medicine, at the Cadillac Hotel, Detroit, Mich., on Saturday, June 4, and Monday, June 6, 1892:

1. Essentials and Non-essentials in Medical Education, the address of the retiring president, Dr. P. S. Conner, of Cincinnati.

2. The Value of the General Preparatory Training afforded by the College as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician, a paper by Dr. T. F. Moses, of Urbana, Ohio.

3. Does a Classical Course enable a Student to Shorten the Period of Professional Study, a paper by Dr. V. C. Vaughan, of Ann Arbor, Mich.

4. The Value of a Collegiate Degree as an evidence of fitness for the Study of Medicine, a paper by Dr. L. H. Mettler, of Chicago.

5. The Value of Academical Training, preparatory to the Study of Medicine, a symposium by Drs. H. B. Allyn, of Philadelphia, W. D. Bidwell, of Washington, and Elbert Wing, of Chicago.

6. The Newer Medical Education in the United States, a symposium by Drs. W. J. Herdman, of Ann Arbor, Charles Jewett, of Brooklyn, and Elbert Wing, of Chicago.

7. A paper on some phase of the State Supervision of the Practice of Medicine, by Perry H. Millard, of St. Paul.

Some other papers are partially promised and the usual reports may be expected from the committees.

Members of the profession are cordially invited to be present at the sessions of the Academy.

DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS.—The Eighteenth Annual Meeting of this Society will be held at City Hall in Pana, Ill., Tuesday, April 26, 1892.

Officers: President, G. W. Fringer, M.D., Pana; First Vice Pres., W. G. Wilson, M.D., Shelbyville; Second Vice Pres., Wm. H. Sparling, M.D., Mowequa; Secretary, J. H. Miller, M.D., 1001 Madison St., Chicago; Treasurer, F. B. Haller, M.D., Vandalia.

Board of Censors: W. J. Eddy, M.D., Shelbyville; J. Huber, M.D., Pana; W. W. Murfin, M.D., Patoka; John A. Prince, M.D., Springfield; Amos Sawyer, M.D., Hillsboro.

Program: Fashions in Medicine, T. J. Whitten, M.D., Jacksonville: Pulmonary Tuberculosis, as seen by a Neighborhood Doctor, Amos Sawyer, M.D., Hillsboro; "What is It?" A Clinical Report. J. H. Miller, M.D., Chicago; Mechanical Treatment of Chronic Rheumatism, L. P. Walbridge, M.D., Decatur; Specific Action of Remedies, J. J. Connor, M.D., Pana.

J. H. MILLER, M.D., Sec'y, 1001 Madison St., Chicago.
G. W. FRINGER, M.D., Pres., Pana.

NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—Annual meeting at Old Point Comfort, Va., May 25–28 inclusive. E. R. Lewis, M.D., Secretary, Kansas City, Mo.; J. H. Murphy, M.D., President, St. Paul, Minn.

MEMBERS of the Mississippi Valley Medical Association wishing to go as delegates to the American Medical Association at Detroit, will please send names to Dr. E. S. McKee, Secretary, 57 W. Seventh St., Cincinnati.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 19, 1892, to April 1, 1892.

First Lieut. Theo. F. DeWitt, Asst. Surgeon U. S. A., granted leave of absence to include May 16, 1892, at which date his resignation has been accepted by the President to take effect.

Capt. Benjamin Munday, Asst. Surgeon U. S. A., granted leave of absence for one month, with permission to apply for an extension of one month.

Capt. Marshall W. Wood, Asst. Surgeon U. S. A., leave of absence granted is extended one month.

Capt. Edwin F. Gardner, Asst. Surgeon U. S. A., granted leave of absence for one month, on surgeon's certificate of disability.

Capt. R. W. Johnson, Asst. Surgeon U. S. A., leave of absence granted for seven days is hereby extended fourteen days.

The suspension of the operation of Par. 2, S. O. 13, A. G. O., January 16, relating to Capt. Aaron H. Appel and First Lieut. Julian M. Cabell, Asst. Surgeons, is removed.

Capt. C. N. B. Macauley, Asst. Surgeon U. S. A., will report for temporary duty at U. S. Military Academy, West Point, N. Y., during the absence of Capt. Henry S. Kilbourne, Asst. Surgeon U. S. A., as member of the Army Medical Board, New York City, and on return of that officer will rejoin his proper station.

First Lieut. Frank T. Meriwether, Asst. Surgeon U. S. A., ordered for temporary duty at Madison Bks., N. Y., during the absence of Capt. Henry S. Turrill, Asst. Surgeon, as member of Army Medical Board, New York City, and on return of that officer will rejoin station.

First Lieut. Francis A. Winter, Asst. Surgeon U. S. A. (recently appointed), will proceed from St. Louis, Mo., to Jefferson Bks., Mo., and report to the commanding officer of that station for duty.

APPOINTMENTS.

To be Asst. Surgeons with the rank of First Lieutenant:

Francis A. Winter, of Alabama, March 9, 1892. Vice De Hanne, retired from active service.

William E. Purviance, of Illinois, March 9, 1892. Vice Steinmetz, retired from active service.

PROMOTIONS.

Lieut.-Col. Joseph C. Baily, Asst. Medical Purveyor, to be Surgeon with the rank of Colonel, March 9, 1892. Vice Norris, retired from active service.

Major William D. Wolverton, Surgeon, to be Asst. Medical Purveyor with the rank of Lieut.-Col., March 9, 1892. Vice Baily, promoted.

Capt. John O. Skinner, Asst. Surgeon, to be Surgeon with the rank of Major, March 9, 1892. Vice Wolverton, promoted.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending April 2, 1892.

Surgeon D. O. Lewis, from Naval Hospital, Washington, and to Naval Hospital, Mare Island, Cal.

P. A. Surgeon T. A. Berryhill, from the U. S. S. "Pensacola," and to the U. S. S. "Ranger."

Merritt W. Barnum, commissioned an Asst. Surgeon in the Navy from March 15, 1892.

Surgeon W. G. Farwell, granted leave of absence for six months, with permission to leave the United States.

Medical Inspector George W. Woods, from the U. S. S. "Pensacola," and to the hospital at Mare Island, Cal.

Medical Director N. L. Bates, detached from Naval Hospital, Mare Island, Cal., and ordered home.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending March 26, 1892.

Surgeon P. H. Bailhache, to inspect unserviceable property at Port Townsend, Wash., Mch. 9, 1892. Detailed as member of Board for physical examination officer Revenue Service. March 26, 1892.

Surgeon George Purviance, ordered to Washington for temporary duty. March 5, 1892.

Surgeon H. W. Austin, to inspect Service at New Orleans, Savannah and Charleston, and the Gulf and South Atlantic Quarantine Stations. March 3, 1892.

Surgeon Fairfax Irwin, detailed as medical inspector of immigrants, port of Boston, Mass. March 3, 1892.

P. A. Surgeon D. A. Carmichael, to inspect the San Francisco Quarantine Station. March 7, 1892.

P. A. Surgeon J. H. White, ordered to South Atlantic Quarantine for temporary duty. March 26, 1892.

P. A. Surgeon J. J. Kinyoun, to proceed to New York on special duty. March 7, 1892.

P. A. Surgeon T. B. Perry, granted leave of absence for thirty days. March 1 and 14, 1892.

Asst. Surgeon G. M. Guiteras, ordered to examination for promotion. March 23, 1892.

Asst. Surgeon B. W. Brown, assigned to temporary duty at San Francisco Quarantine. March 14, 1892.

Asst. Surgeon J. M. Eager granted leave of absence for thirty days. March 1, 1892.

Asst. Surgeon C. E. Decker, detailed as recorder, Board for physical examination officer Revenue Marine Service. March 26, 1892.

PROMOTION.

P. A. Surgeon J. O. Cobb, commissioned by the President as Passed Asst. Surgeon. March 23, 1892.